EAGLE TUGS

Parts and Service Manual

Vehicle Types: USATS

Engine Type: Yanmar Diesel 4TNV98 Tier II and Tier III Engine Models

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INTRODUCTION

From everyone at Eagle Tugs, we would like to say Thank You for purchasing an Eagle USATS series tow tractor. We take a lot of pride in the quality of the products that we build, as well as our continued customer service. Our goal is to build a long term relationship with our customers. We want you, the customer, to be 100% satisfied with your Eagle experience. To us, this means that your Eagle USATS series tractor is functionally superior to any other products you have used. This also means that your Eagle product is continually supported in a professional, timely manner.

PURPOSE & USE OF THIS MANUAL

This manual is designed as a reference guide to make the reader more familiar with the components of the Eagle USATS tow tractor models. This manual includes part numbers and descriptions to assist the reader in ordering component spare/service parts. The manual also outlines the Scheduled Maintenance Intervals recommended by Eagle in order to keep your vehicle running properly. In this manual you will also find the Eagle Standard Warranty on all of the USATS series tow tractors. However, for more detailed information on the Eagle Warranty and procedure, as well as information pertaining to the safe operation of your Eagle product, please see the Eagle Operations Manual that was also included with your vehicle.

TECHNICAL ASSISTANCE

When addressing a repair procedure or operational problem, please remember that Eagle technical support is only a phone call away. Eagle technicians are available to assist you in vehicle diagnostics and recommended repair procedures. We encourage you to use this service to reduce machine down-time and to gain a better understanding of proper repair procedures.

ORDERING SPARE/SERVICE PARTS

Eagle inventories most of the component parts found in its USATS series tow tractors, and most spare/service parts can be shipped the same day the order is received. Parts orders need to be received at Eagle by 12:00 pm (Noon) EST in order for the parts to be shipped that same day. Parts ordered after 12:00 pm EST will most likely be shipped the following day.

CONTACT INFORMATION

Eagle Corporate Office
26111 Northline Rd
Taylor, MI 48180
(800) 671-0431
www.eagletugs.com

Customer Service
customerservice@eagletugs.com
(734) 442-1000 -- (800) 671-0431

Parts & Service
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(734) 442-1000 -- (800) 671-0431

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WARRANTY

IMPORTANT SAFETY NOTICE

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all industrial engines as well as the personal safety of the individual performing the work. This Service Manual provides general directions for accomplishing service and repair work with tested and effective techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools and parts for servicing equipment, as well as in the skill of the individual doing the work. This Manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in this Manual must first establish he compromises his/her personal safety, and/or the equipment integrity by his/her choice of methods, tools or parts.

WARNINGS

The following list contains some general WARNINGS that you should follow when you work on equipment:

- Always wear safety glasses for eye protection.
- Use safety stands whenever a procedure requires you to be under the equipment.
- Be sure that the ignitions switch is always in the OFF position, unless otherwise required by the procedure.
- Set the parking brake (if equipped) when working on the equipment. Place wood blocks (4" x 4" or larger) to the front and rear surfaces of the tires to provide further restraint from inadvertent equipment movement.
- Operate the engine only in a well-ventilated area to avoid the danger of carbon monoxide.
- Keep yourself and your clothing away from moving parts when the engine is running, especially the fan and belts.
- To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe, catalytic converter and muffler.
- Do not smoke while working on the equipment.
- To avoid injury, always remove rings, watches, loose hanging jewelry, and loose clothing before beginning to work on the equipment. Tie long hair securely behind the head.
- Keep hands and other objects clear of the radiator and blades.

For more information regarding safety please refer to the operations manual provided with your tug. This manual can also be found on the Eagle Tugs website at www.eagletugs.com.

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WARRANTY

WARRANTY INFORMATION

Please read the Eagle Tugs warranty statement (available on our website) carefully.

When contacting Eagle Tugs for warranty or parts service, please have the following information ready:

- Tractor model number
- Tractor serial number
- Current hour reading

WARRANTY

VEHICLE ID INFORMATION

This information can be found on the tractor's I.D. Plate located on the firewall next to the driver's seat. Additionally, there is a permanent serial number located on the rear bulkhead inside the engine compartment.

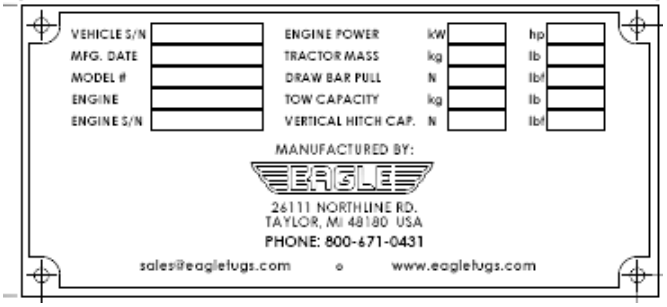
MODEL _____

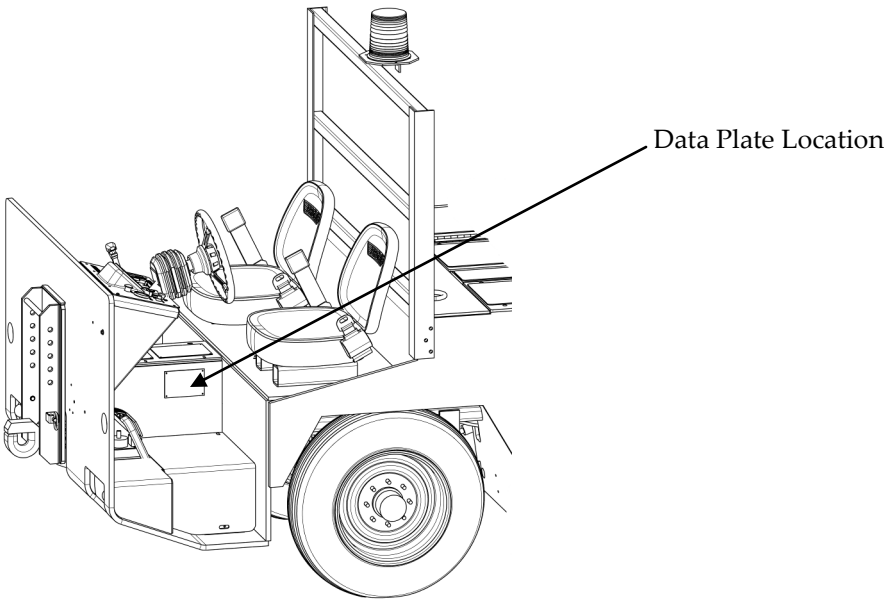
SERIAL NO _____

MFG DATE _____

ENGINE TYPE _____

ENGINE SERIAL NO _____





WARRANTY

WARRANTY REGISTRATION INFORMATION

Please complete the Warranty Registration information on line at our website www.eagletugs.com.

YANMAR ENGINE WARRANTY REGISTRATION INFORMATION

The following pertains to warranty regarding the Yanmar engine only. For warranty issues not related to the engine in your tug please contact Eagle Tugs directly at 800-671-0431.

The Purchaser should register the Product as soon as possible after purchase. Registration may allow Yanmar to provide Product updates, Product improvements and other important information to the Purchaser. Registration will also make processing a future warranty claim more efficient and convenient for the Purchaser and Yanmar. A Purchaser should register the Product on-line by entering the required information into the Customer Registration screens found on Yanmar's website at http://www.yanmar.co.jp. To register product(click on the Customer Registration link. Go to Industrial Engines and then click on the Industrial Engine link. Enter the registration information in the necessary fields.

AUTHORIZED YANMAR DISTRIBUTOR INFORMATION

The Yanmar Distributor Information can be found on the Yanmar website at

www.yanmar.com/industrial/dealerlocatormainmap.asp. If you need help finding a distributor in your area please call Eagle Tugs at 800-671-0431.

TIRES

For tire warranty please contact Eagle directly by phone at 800-671-0431, by email at support@eagletugs.com or through our website at www.eagletugs.com .

BATTERY

In the U.S. and Canada, call 1-888-823-0954 or 1-877-255-2287

Outside the Continental U.S. and Canada please contact Eagle directly.

NOTE: At the time a warranty claim is filed it may be necessary for Eagle Tugs to request a copy the maintenance records kept on your tug. For your convenience a printable Preventative Maintenance Schedule page is available in the Maintenance section of this manual.

WARRANTY

Eagle Tugs Service Bulletin

ESB-02-08

Date: October 14, 2008

Affected Models: Diesel powered TT series tow tractors

Subject: Tier 3/Stage IIIA diesel engine fuel requirements

Background:

The EPA mandated change to Tier 3 diesel engines and EC directives for Stage IIIA diesel engines with higher emission requirements has caused some changes to recommended and acceptable fuels. This document will clarify those requirements as they pertain to Eagle Tugs' products.

Tier 2:

Eagle Tugs is currently phasing out Tier 2 engines as part of EPA and EC mandated controls. These engines will no longer be available for sale unless part of a military exemption, or being exported to non-conforming countries.

Tier 2 engines will run on standard diesel fuels 1-D and 2-D with sulfur content up to 5000ppm without modification.

Tier 2 engines will run on jet fuels Jet-A and JP8 with either lubricity filter / additives, or OEM fuel system modifications to accomodate the lower lubricity jet fuels.

Tier 3 / Stage IIIA:

Eagle Tugs is currently phasing in Tier 3 / Stage IIIA conforming engines per EPA and EC mandates.

Tier 3 engines will run on fuels with sulfur content of less than 500 ppm or .05% without modification. This includes fuels commonly referred to Low Sulfur Diesel (LSD) and Ultra Low Sulfur Diesel (ULDS).

Tier 3 engines will NOT run properly on Jet-A or JP8 fuel due to the high sulfur content. The EGR system on tier 3 engines allows sulfur in the fuel to recirculate from the exhaust back into the intake where it is converted to sulfuric acid which corrodes internal engine components. In the future as jet fuel standards are directed towards lower sulfur content, this may change.

Tabulated Data:

	High-Sulfur Diesel Fuel	LSD or ULSD Fuel	JetA and JP8
Tier 2	No modification necessary	No modification necessary	Requires lubricity enhancement or engine modification
Tier 3 / Stage IIIA	Not acceptable	No modification necessary	Not acceptable

If you have any questions, please contact Eagle technical support at 734-442-1000.

Revision 1, 10/15/08

SERVICE PARTS ILLUSTRATIONS & DETAIL

IDENTIFICATION KEY

The following abbreviations are used throughout the parts lists in this section.

Abbreviation	Meaning	Purpose
NL	Not Listed	Part required but not shown on diagram
NPN	No Part Number	Parts shown and numbered, but not stocked and sold by Eagle. Typically used for bolts, clamps, etc…
AR	As required	

TO HELP US SERVICE YOU BETTER. HAVE TUG MODEL AND SERIAL NUMBER AVAILABLE WHEN ORDERING PARTS

NOTE: THIS MANUAL COVERS PARTS & SERVICE FOR EAGLE USATS MODELS WITH BOTH THE YANMAR TIER II AND TIER III ENGINES. PLEASE BE SURE TO CHECK THE HEADING ON EACH PAGE TO SEE IF THE PARTS REFERENCED ARE FOR A :

YANMAR TIER II DIESEL

OR

YANMAR TIER III DIESEL

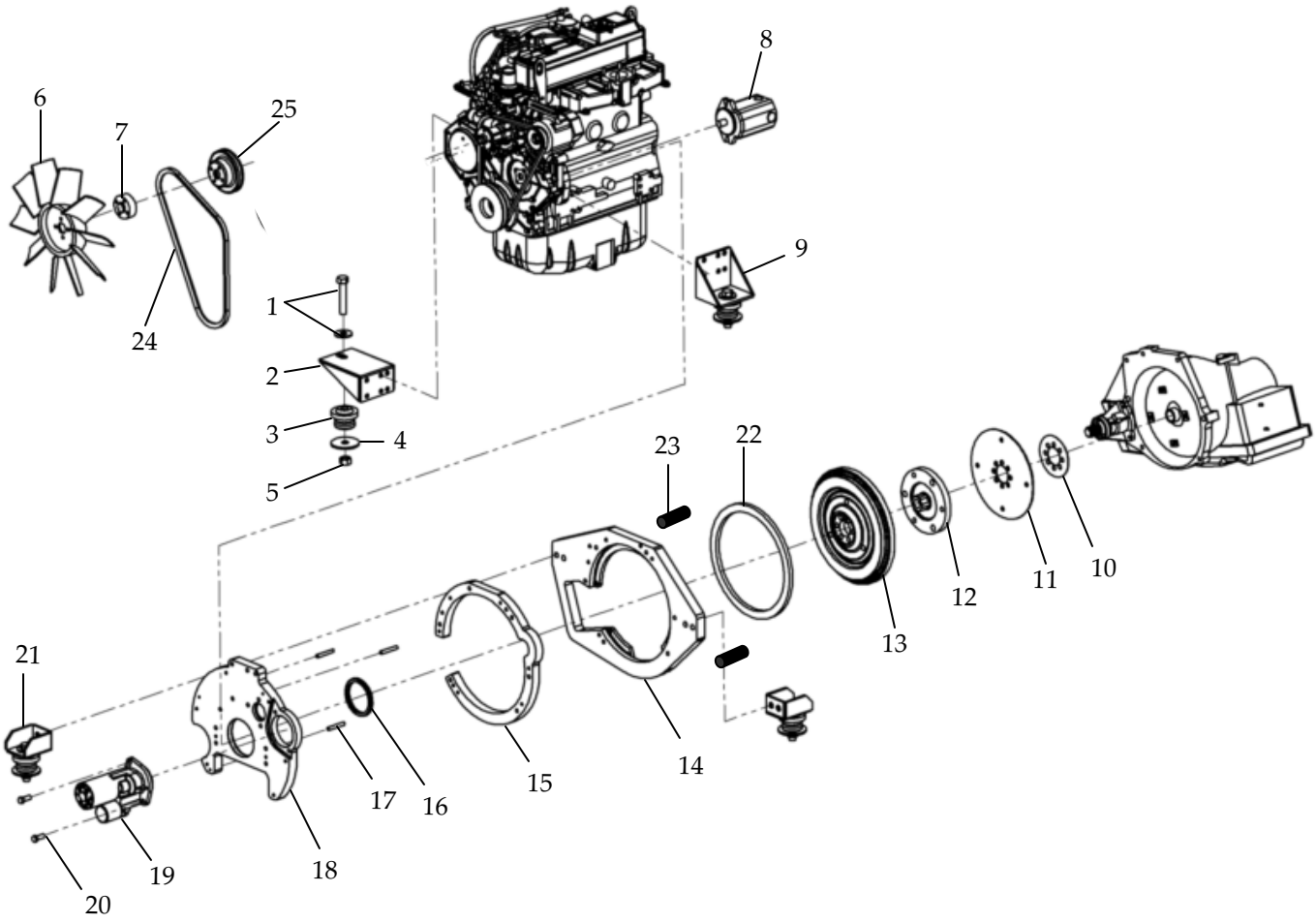
ALL PAGES WITHOUT THE ABOVE IN THE DESCRIPTION DENOTE PARTS ARE USED ON MODELS POWERED WITH BOTH A YANMAR TIER II AND YANMAR TIER III ENGINE.

TO DETERMINE IF YOUR TUG IS POWERED BY A TIER II OR TIER III ENGINE WITHOUT TURNING ON DISPLAY.

ALL TIER II TUGS ARE EQUIPPED WITH A MANUAL ALUMINUM FOOT PEDAL AND ALL TIER III TUGS ARE EQUIPEED WITH A BLACK PLASTIC ELECTRONIC FOOT PEDAL. ADDITIONALLY, ALL TIER II TUGS MANUFACTURED AFTER FEBRUARY 1, 2012 HAVE ANALOG GAUGES.

POWER TRAIN

ENGINE DRESS



Note: Torque values shown in this manual are for clean, non-lubricated fasteners unless otherwise specified.

CAUTION: The tightening torque in the above Standard Torque Chart should be applied only to the bolts with a "7" head. (JIS strength classification 71).

*Apply 60% torque to bolts that are not listed.

STANDARD TORQUE CHART							
Thread Size x Pitch mm		M6 x 1.0	M8 x 1.25	M10 x 1.5	M12 x 1.75	M14 x 1.5	M16 x 1.5
Tightening Torque	in-lb	87-105					
	ft-lb		17-21	32-40	58-72	94-108	160-174
	N-m	9.8-11.8	22.6-28.4	45-54.8	78.5-98.10	127.2-146.8	216.2-235.8
	kgf/m	1.1	2.03-2.09	4.5-5.5	8.0-10.0	12.5-15.5	21-25

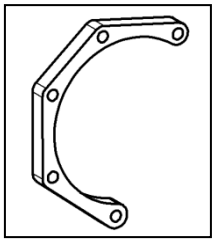
POWER TRAIN

ENGINE DRESS

Item	Part Number	Qty	Description
1	NPN	4	3/4-16.5 BOLT & 3/4" FLAT WASHER
2	B-TT5D-00008-1	1	ENGINE MOUNT
3	A-TT5D-00013-1	4	ISOLATOR
4	A-TT5D-00010	4	LORD WASHER
5	NPN	4	3/4" LOCK NUT
6	5136603081	1	FAN
7	A-SATS-00360	1	FAN SPACER
8	V10F1T3T11C3F20L	1	METARIS PUMP
9	B-TT5D-00006-1	1	FRONT ENGINE MOUNT
10	TM27C00305-ID	1	FLEX PLATE WASHER
11	B-TT10TD-00016-ID	1	FLEX PLATE
12	B-TT5D-00017-4TNV	1	FLEX PLATE ADAPTER
13	129953-21570	1	FLYWHEEL WITH RING GEAR
14	B-TT10TD-00001-4TNV	1	TRANS PLATE
15	B-TT10TD-00002	1	TRANS PLATE SPACER
16	129900-01780	1	OIL SEAL
17	41HN28	3	ADJ PLATE DOWEL PINS 3/8 X 2.5
18	TMD27B00521-4TNV	1	ENGINE PLATE
19	129940-77010	1	STARTER
20	26116-120302	2	BOLT, M12 X 30 PLATED
21	B-TT5D-00009	2	ENGINE MOUNT TRANS PLATE
22	129900-21600	1	RING GEAR
23	5240849	2	TRANSMISSION DOWEL PIN
24	9440	1	REMOTE FAN BELT TIER II ENGINE MODELS/ TIER III WITH HI OUT PUT ALTERNATOR
24	A-TT8-00359	1	REMOTE FAN BELT TIER III ENGINE MODEL
25	129900-42450	1	PULLEY
26	A-USAT5-50-16-1	1	BOTTOM SHROUD (NOT SHOWN)
27	A-USAT5-50-15-1	1	UPPER SHROUD (NOT SHOWN)

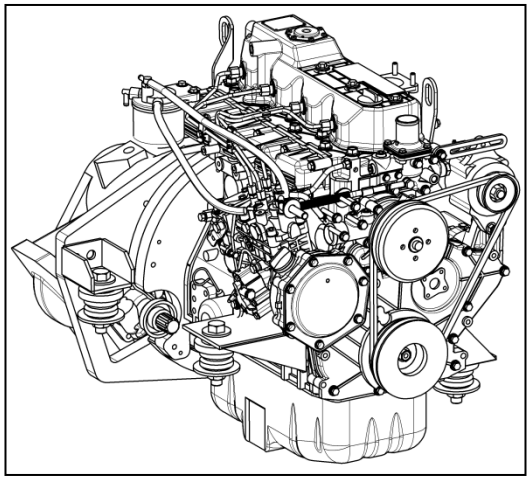
POWER TRAIN

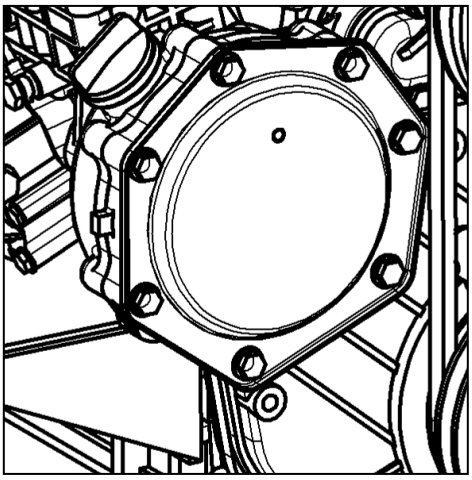
Choosing the Correct Fan Bracket Spacer



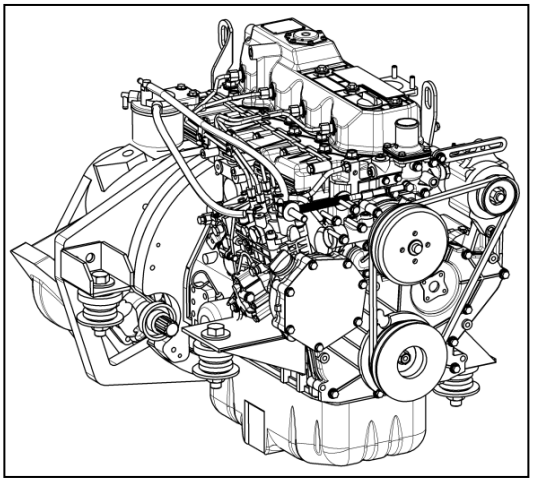
The fan bracket spacer shown above comes in two different versions. Version A-TT8-00361 is .625" thick. Version A-TT8-00363 is .50" thick. Using this guide will make determining which version you need very easy.

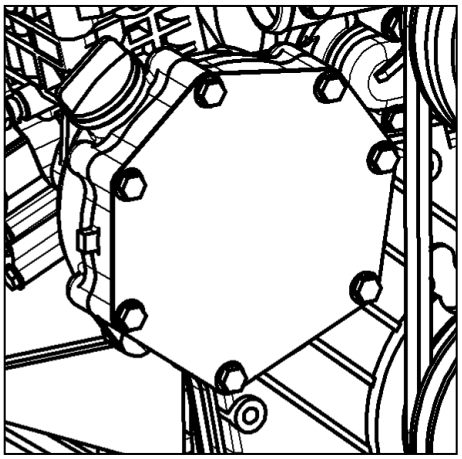
Version A-TT8-00361: This part should be used if the cover circled below is a stamped part with a dome in the center and a ridge around the outside as shown:





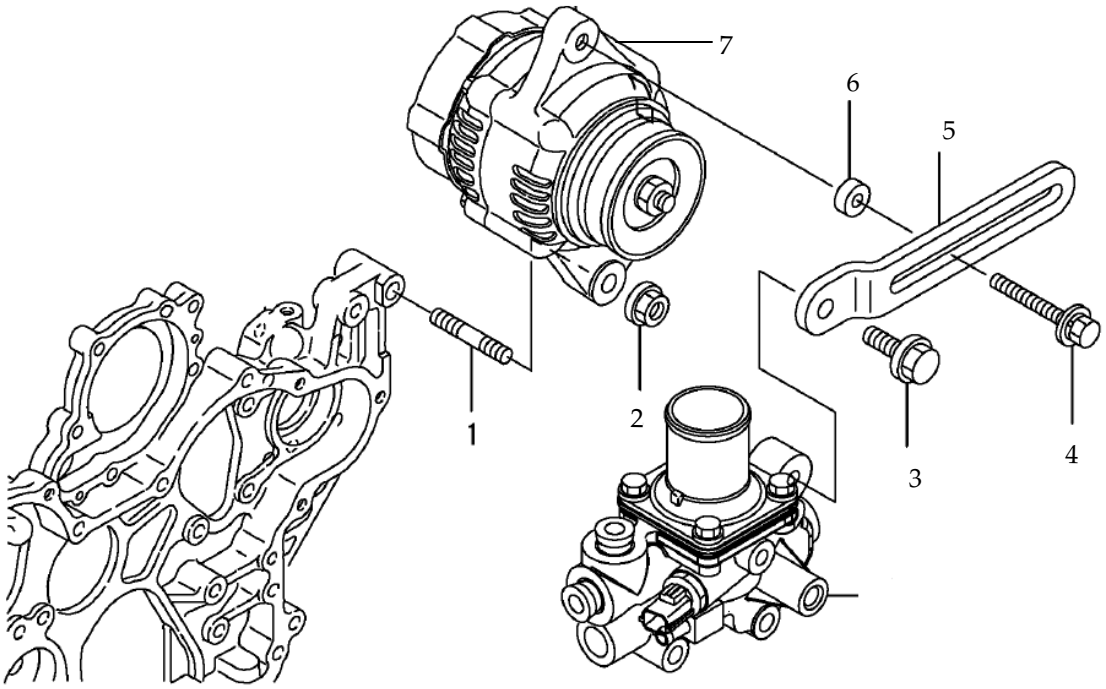
Version A-TT8-00363: This part should be used if the cover circled below is a flat sheet as shown:





POWER TRAIN

55 AND 80 AMP ALTERNATOR ASSEMBLY—YANMAR TIER III



Item	Part Number	Qty	Description
1	129795-01900	1	STUD, ALTERNATOR 55 AMP ALT
1	26116-101202	1	STUD, ALTERNATOR 80 AMP ALT
2	26306-100002	2	NUT, ALTERNATOR 55 AMP ALT
2	26366-100002	2	NUT, ALTERNATOR 80 AMP ALT
3	26106-080222	1	BOLT, M8 X 22 PLATED 55 AMP ALT
3	26014-080252	2	STUD 80 AMP ALT
4	129972-77341	1	BOLT ,ADJUSTING
5	129972-77330	1	ADJUSTER BRACKET 55 AMP ALT
5	129900-77330	1	ADJUSTER BRACKET 80 AMP ALT
6	119940-77270	1	SPACER 55 AMP ALT (RED ID TAG)
6	129470-77340	1	SPACER 80 AMP ALT
7	119626-77210	1	ALTERNATOR 55 AMP
7	129612-77290	1	ALTERNATOR 80 AMP
8	25132-004200	1	ALTERNATOR BELT NOT SHOWN

**55 AMP ALTERNATORS 10-07 THRU 1-08 **80 AMP ALTERNATORS THERE AFTER . **TRANSIT PRO MODELS MAY BE EQUIPPED WITH AN OPTIONAL 105 AMP ALTERNATOR.

POWER TRAIN

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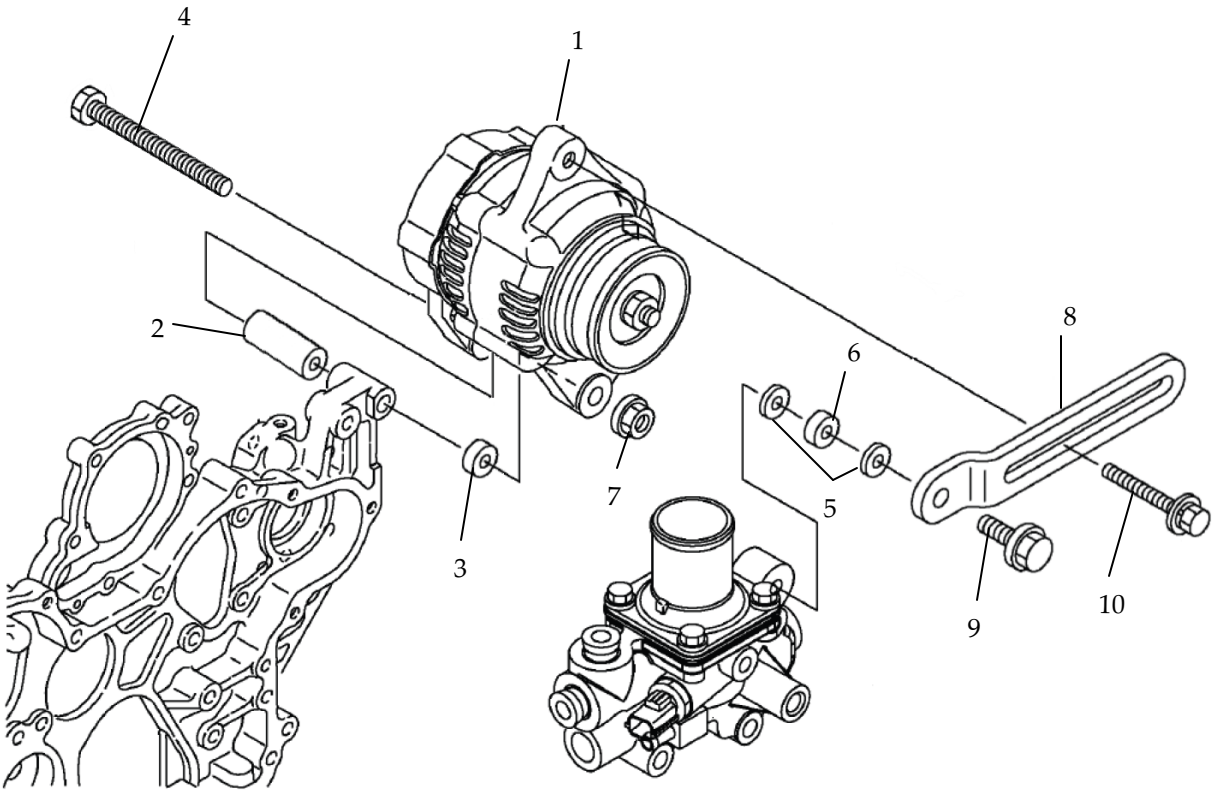
POWER TRAIN

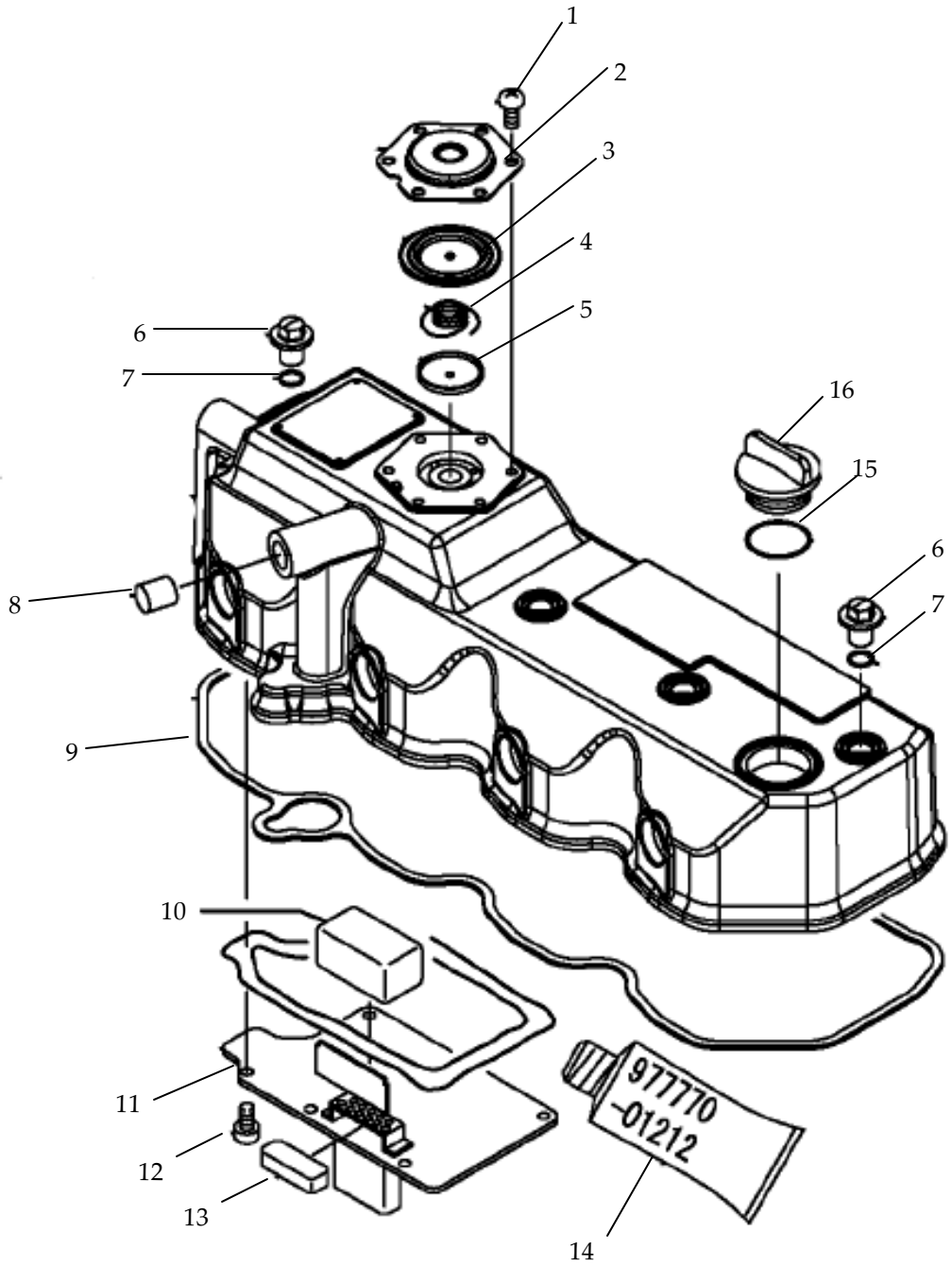
ALTERNATOR ASSEMBLY TIER II



Item	Part Number	Qty	Description
1	AE-OPT-0021	1	105A ALTERNATOR
2	NPN	1	1.40 SPACER
3	NPN	1	.23 SPACER
4	NPN	1	M10-1.5 x 130
5	NPN	2	5/16 FLAT WASHER
6	119940-77270	1	SPACER
7	26306-100002	1	M10-1.5 LOCK NUT
8	129972-77330	1	ADJUSTER BRACKET, ALTERNATOR
9	26106-080222	1	BOLT, M8 X 22 PLATED
10	129972-77341	1	BOLT ,ADJUSTING
11	9440	1	ALTERNATOR BELT(NOT SHOWN)

POWER TRAIN

HEAD COVER ASSEMBLY



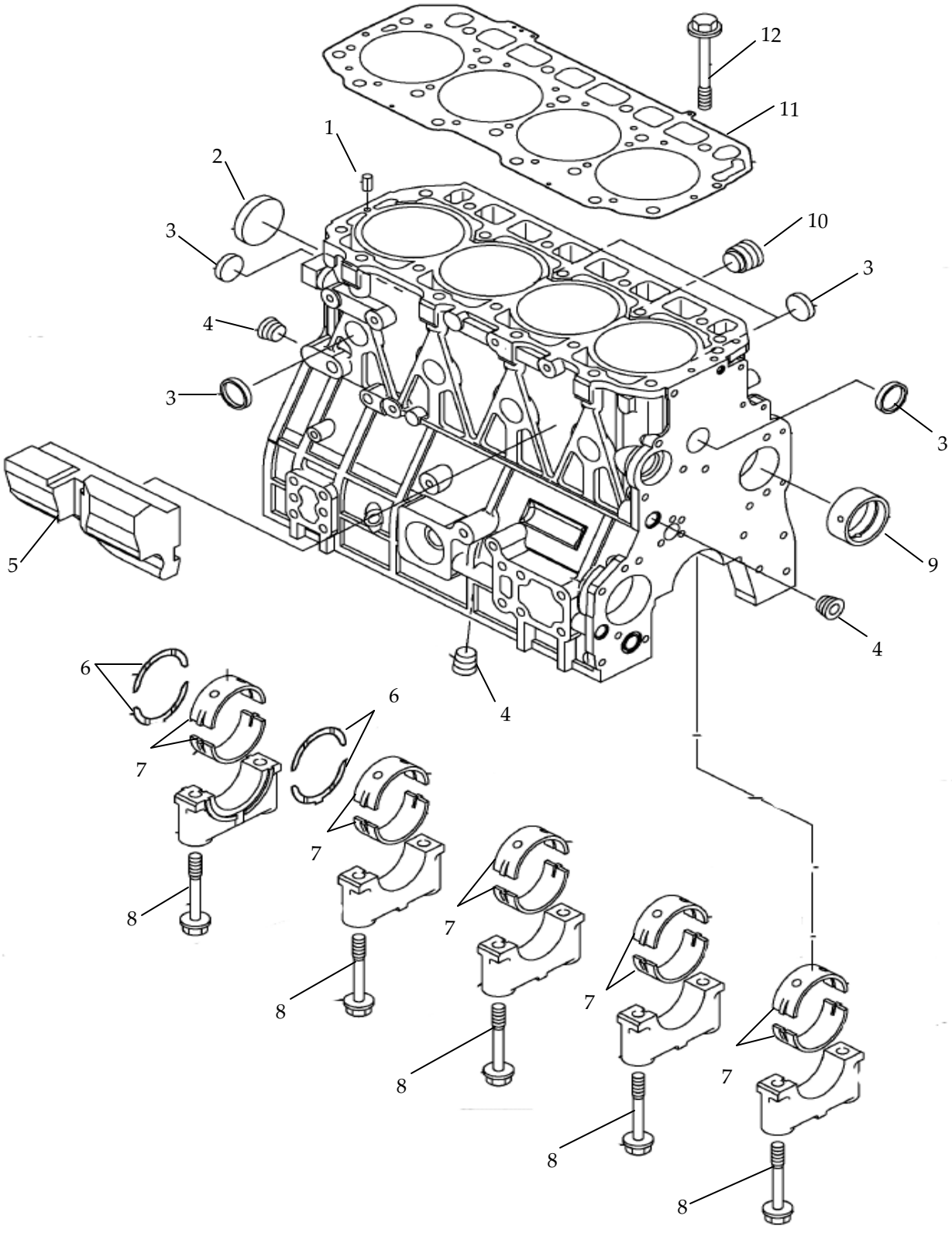
POWER TRAIN

HEAD COVER ASSEMBLY

Item	Part Number	Qty	Description
1	22857-500100	6	SCREW 5 X 10 TAPIING
2	123907-03120	1	PLATE, BREATHER
3	123907-03100	1	DIAPHRAM, BREATHER
4	123907-03140	1	SPRING, DIAPHRAM
5	123907-03110	1	CENTER PLATE
6	124160-11360	4	KNOB
7	24311-000120	4	O-RING 1A P12.0
8	119640-61400	1	PLUG
9	129907-11310	1	HEAD COVER GASKET
10	129907-03070	1	BAFFLE
11	129907-03010	1	BAFFLE PLATE
12	22857-500100	6	SCREW 5 X 10 TAPIING
13	129907-03060	1	BAFFLE
14	977770-01212	1	GASKET, LIQUID
15	24311-000320	1	O-RING 1A P32.0
16	124160-01751	1	OIL FILLER CAP
17	129907-11320	1	HEAD COVER ASSY INCLUDES ITEMS 1-13

POWER TRAIN

CYLINDER BLOCK ASSEMBLY TIER II



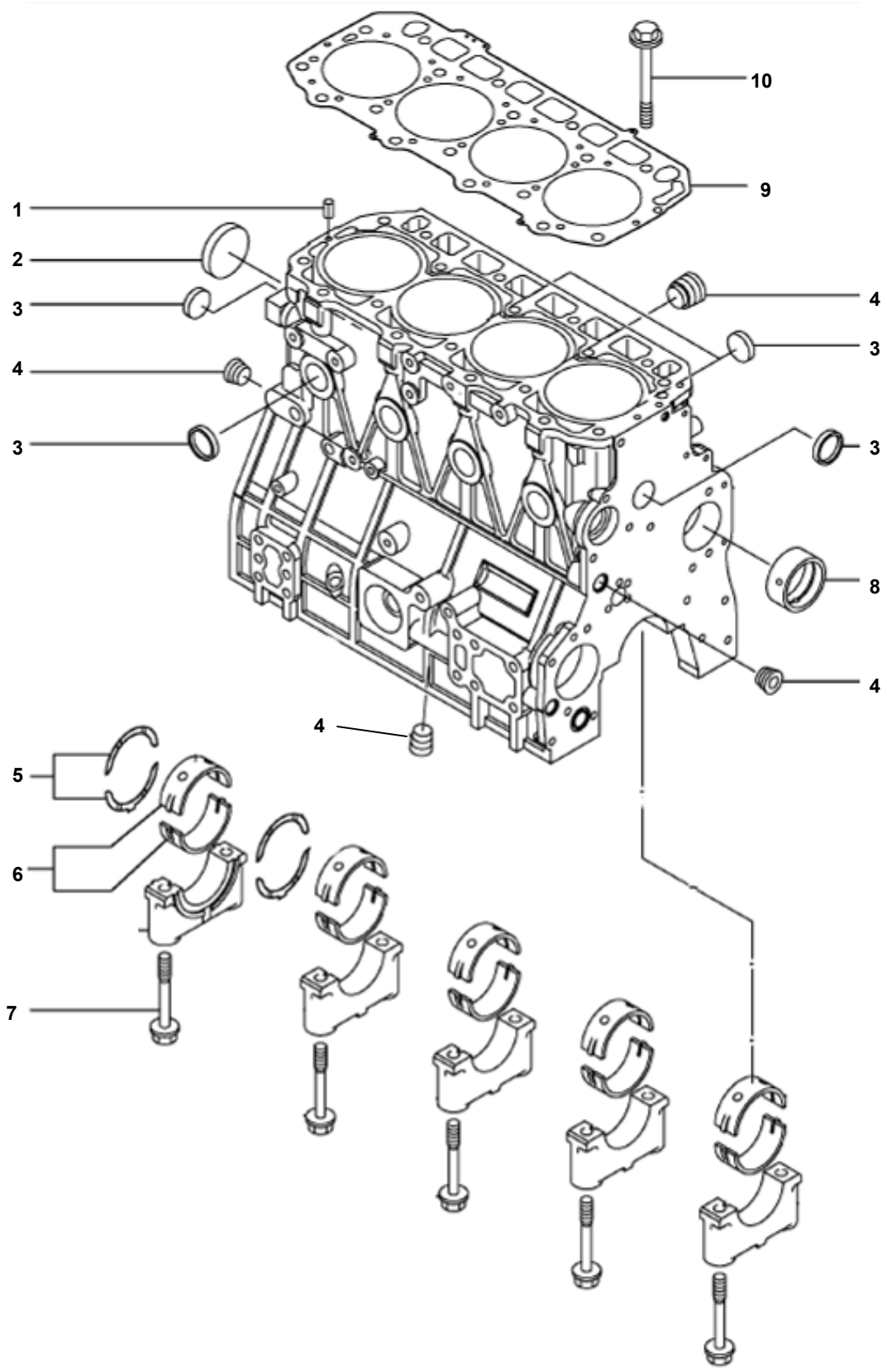
POWER TRAIN

CYLINDER BLOCK ASSEMBLY TIER II

Item	Part Number	Qty	Description
1	22351-060012	2	SPRING PIN 6 X 12
2	129900-01250	1	PLUG 55
3	27241-300000	8	PLUG 30
4	23876-030000	3	PLUG PT 3/8 SCREW
5	129907-01190	1	SPACER
6	129900-02930	2	BEARING ASSY, THRUST
6	129900-02940	2	BEARING ASSY, THRUST O/S=.025
7	729900-02800	5	MAIN BEARING SET
7	129900-02340	5	MAIN BEARING SET O/S=.025
8	129900-02020	10	BOLT, METAL CAP
9	129900-02410	1	BUSH, CAMSHAFT
10	171051-01921	1	PLUG
11	129907-01331	1	CYLINDER HEAD GASKET
12	129900-01200	18	BOLT, HEAD
13	729907-01560	1	CYLINDER BLOCK ASSY, INC ITEMS 1-10

POWER TRAIN

CYLINDER BLOCK ASSEMBLY—YANMAR TIER III DIESEL



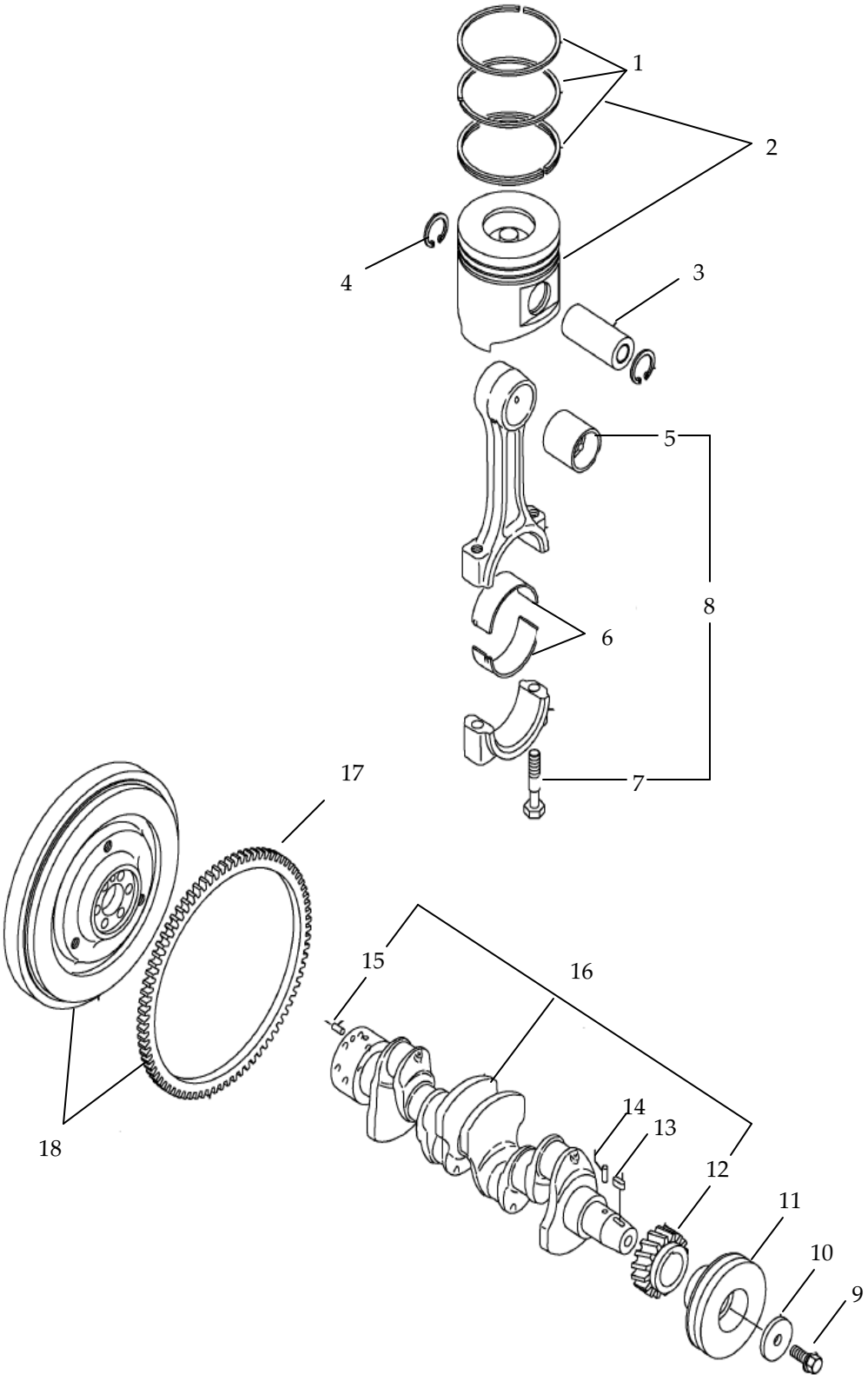
POWER TRAIN

CYLINDER BLOCK ASSEMBLY—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	22351-060012	2	SPRING PIN 6 X 12
2	129900-01250	1	PLUG 55
3	27241-300000	8	PLUG 30
4	23876-030000	3	PLUG PT 3/8 SCREW
5	129900-02931	2	BEARING ASSY, THRUST
5	129900-02941	2	BEARING ASSY, THRUST O/S=.025
6	729900-02801	5	MAIN BEARING SET
6	129900-02341	5	MAIN BEARING SET O/S=.025
7	129900-02020	10	BOLT, METAL CAP
8	129900-02410	1	BUSH, CAMSHAFT
9	129907-01331	1	CYLINDER HEAD GASKET
10	129900-01200	18	BOLT, HEAD
11	729927-01560	1	CYLINDER BLOCK ASSY, INC ITEMS 1-10

POWER TRAIN

CRANKSHAFT & PISTON TIER II



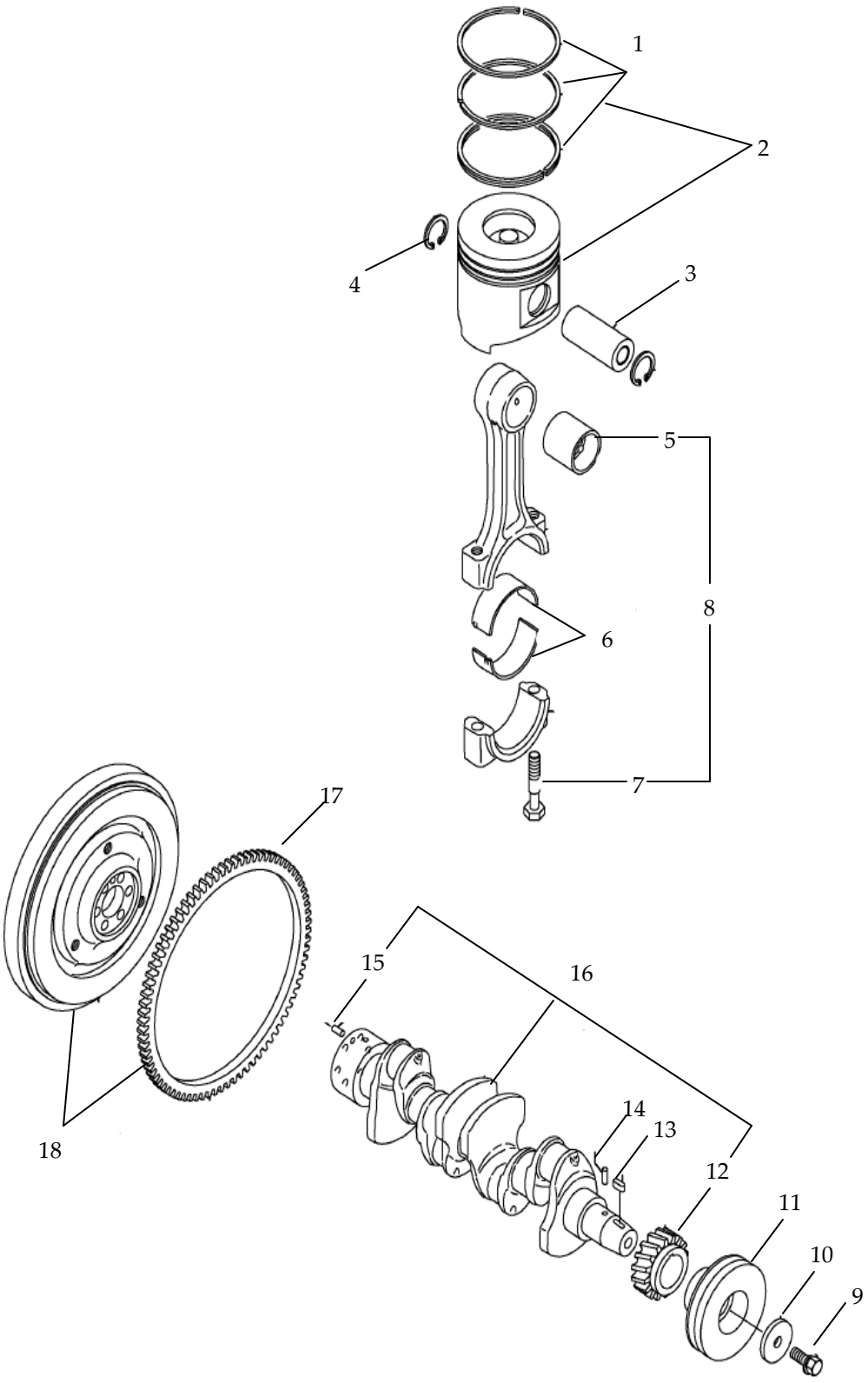
POWER TRAIN

CRANKSHAFT & PISTON TIER II

Item	Part Number	Qty	Description
1	129907-22050	4	RING SET STANDARD
1	729907-22950	4	RING SET O/S=0.25
2	129907-22090	4	PISTON WITH RING STANDARD
2	129907-22910	4	PISTON WITH RING STANDARD O/S=0.25
3	120130-22301	4	PISTON PIN
4	22252-000300	8	CIRCLIP 30
5	129900-23910	4	BUSH, PISTON PIN
6	129900-23600	4	METAL ASSY, CRANKCASE PIN STANDARD
6	129900-23610	4	BEARING PIN O/S=.025
7	129900-23200	8	BOLT, ROD
8	129900-23000	4	CONNECTING ROD ASSY
9	121850-21680	1	BOLT, V-PULLEY
10	129900-21640	1	WASHER
11	129907-21660	1	V-PULLEY, CRANKCASE
12	129900-21200	1	GEAR, CRANKSHAFT
13	22512-070140	1	KEY 7 X 14
14	121850-21290	1	PARALLEL PIN
15	121850-21920	1	PARALLEL PIN 10 X 22
16	129902-21000	1	CRANKSHAFT ASSY INCLUDES ITEMS 12-15
17	129900-21600	1	RING GEAR
18	129953-21570	1	FLYWHEEL WITH RING GEAR

POWER TRAIN

CRANKSHAFT & PISTON—YANMAR TIER III DIESEL



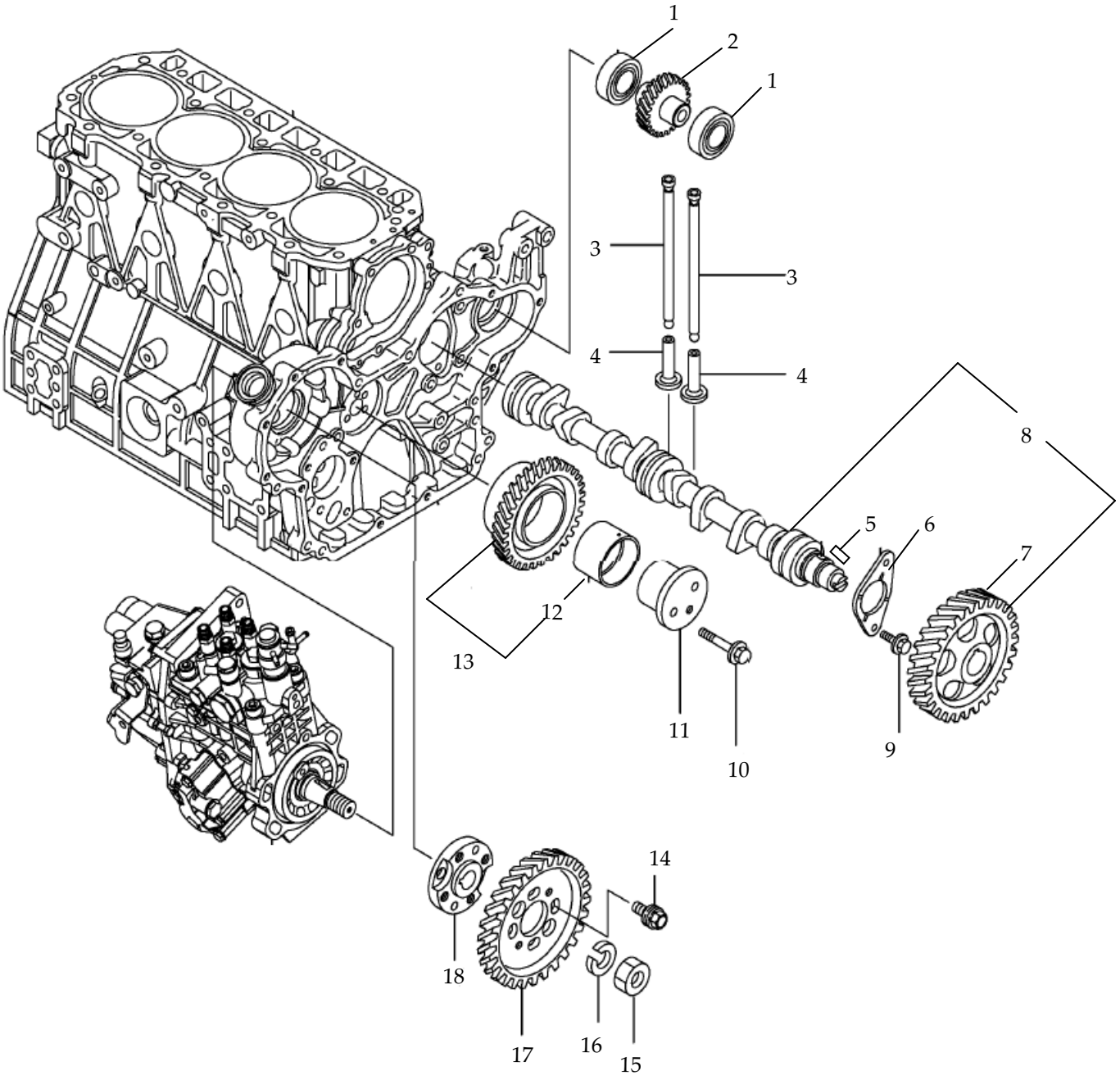
POWER TRAIN

CRANKSHAFT & PISTON—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	129927-22050	4	RING SET STANDARD
1	729927-22950	4	RING SET O/S=0.25
2	129907-22080	4	PISTON WITH RING STANDARD
2	129907-22900	4	PISTON WITH RING STANDARD O/S=0.25
3	120130-22301	4	PISTON PIN
4	22252-000300	8	CIRCLIP 30
5	129900-23911	4	BUSH, PISTON PIN
6	129900-23601	4	BEARING ASSY, CRANKCASE PIN STANDARD
6	129900-23611	4	BEARING PIN O/S=.025
7	129900-23200	8	BOLT, ROD
8	129900-23001	4	CONNECTING ROD ASSY
9	129916-21610	1	BOLT, V-PULLEY
10	129900-21640	1	WASHER
11	129907-21660	1	V-PULLEY, CRANKCASE
12	129900-21220	1	GEAR, CRANKSHAFT
13	22512-070140	1	KEY 7 X 14
14	121850-21290	1	PARALLEL PIN
15	121850-21920	1	PARALLEL PIN 10 X 22
16	129902-21050	1	CRANKSHAFT ASSY INCLUDED ITEMS 12-15
17	129900-21600	1	RING GEAR
18	129953-21570	1	FLYWHEEL WITH RING GEAR

POWER TRAIN

CAMSHAFT & DRIVING GEAR TIER II



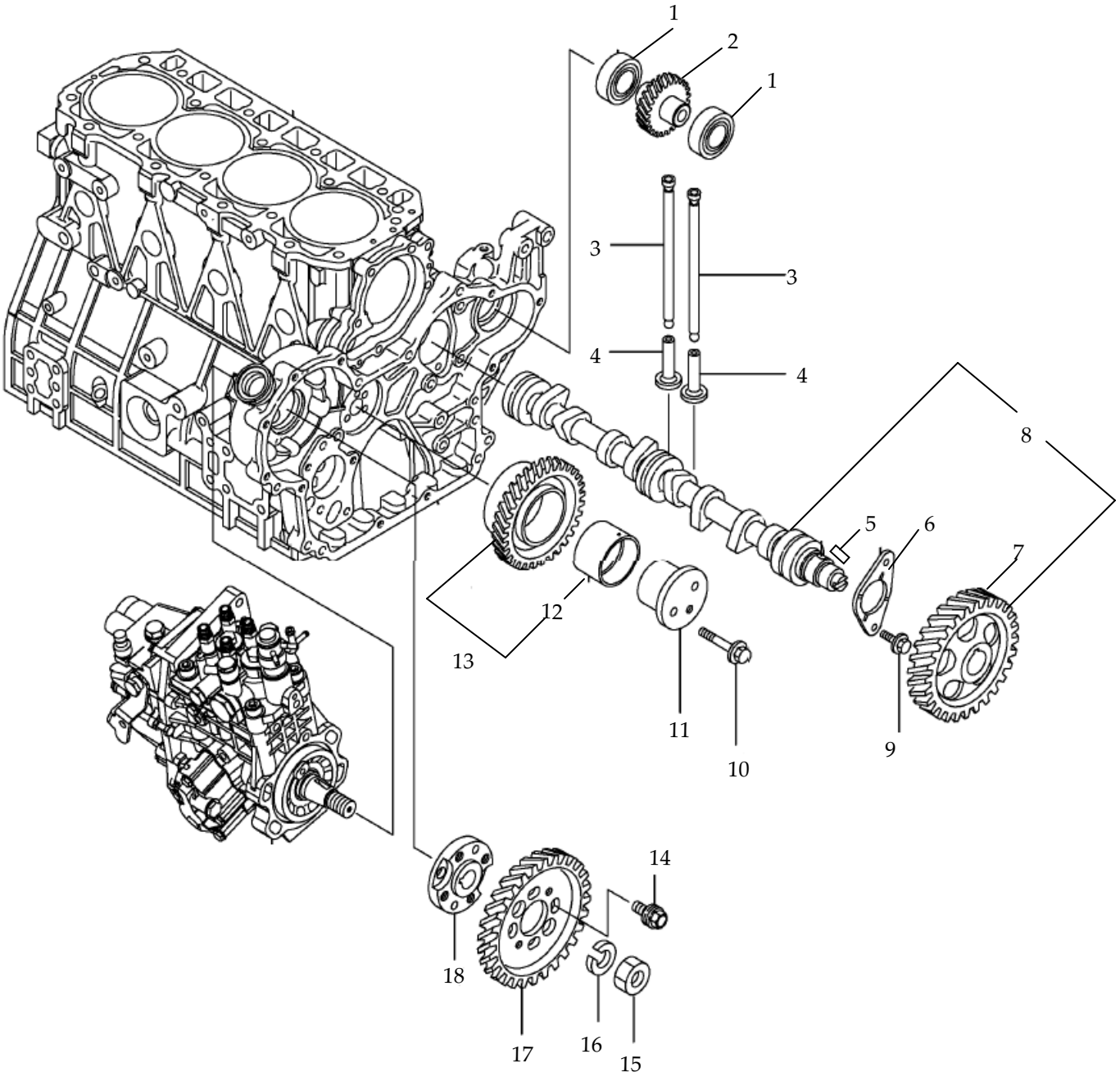
POWER TRAIN

CAMSHAFT & DRIVING GEAR TIER II

Item	Part Number	Qty	Description
1	129900-26250	2	BALL BEARING
2	129980-26200	1	GEAR, HO PUMP
3	129907-14400	8	PUSH ROD
4	129150-14200	8	TAPPET
5	22512-070140	1	KEY 7 X 14
6	129150-02450	1	METAL THRUST(CAM)
7	129900-14100	1	GEAR, CAMSHAFT
8	129907-14581	1	CAMSHAFT ASSEMBLY INCLUDES ITEMS 5-7
9	26106-080162	2	BOLT, M8 X 16 PLATED
10	26106-080552	3	BOLT, M8 X 55 PLATED
11	123900-25060	1	SHAFT(GEAR IDLE)
12	129150-25920	1	BUSH, IDLE GEAR
13	129900-25100	1	GEAR ASSEMBLY INCLUDES ITEM 12
14	129953-25300	4	BOLT
15	26776-180002	1	NUT, M18 LOCK
16	22217-180000	1	SPRING WASHER 18
17	123907-25909	1	GEAR, FUEL INJECTION PUMP
18	158563-51150	1	FLANGE

POWER TRAIN

CAMSHAFT & DRIVING GEAR—YANMAR TIER III DIESEL



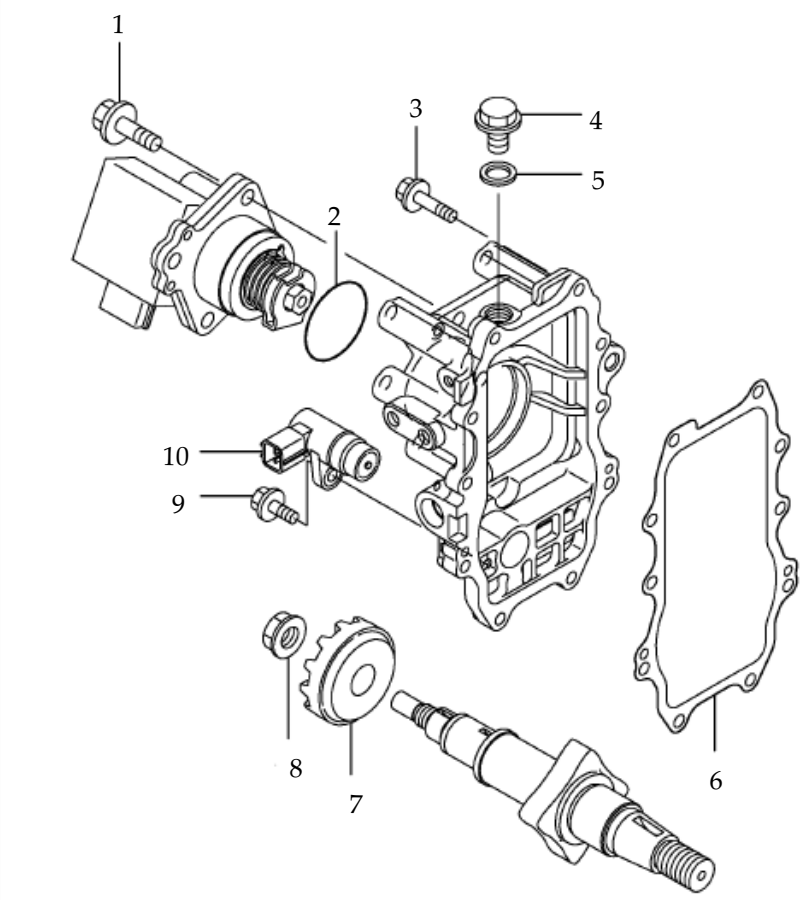
POWER TRAIN

CAMSHAFT & DRIVING GEAR—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	129900-26250	2	BALL BEARING
2	129980-26200	1	GEAR, HO PUMP
3	129907-14400	8	PUSH ROD
4	129150-14200	8	TAPPET
5	22512-070140	1	KEY 7 X 14
6	129150-02450	1	THRUST BEARING(CAM)
7	129900-14100	1	GEAR, CAMSHAFT
8	129907-14581	1	CAMSHAFT ASSEMBLY INCLUDES ITEMS 5-7
9	26106-080162	2	BOLT, M8 X 16 PLATED
10	26106-080552	3	BOLT, M8 X 55 PLATED
11	123900-25060	1	SHAFT(GEAR IDLE)
12	129150-25920	1	BUSH, IDLE GEAR
13	129900-25100	1	GEAR ASSEMBLY INCLUDES ITEM 12
14	129953-25300	4	BOLT
15	26776-180002	1	NUT, M18 LOCK
16	22217-180000	1	SPRING WASHER 18
17	123907-25909	1	GEAR, FUEL INJECTION PUMP
18	158563-51150	1	FLANGE

POWER TRAIN

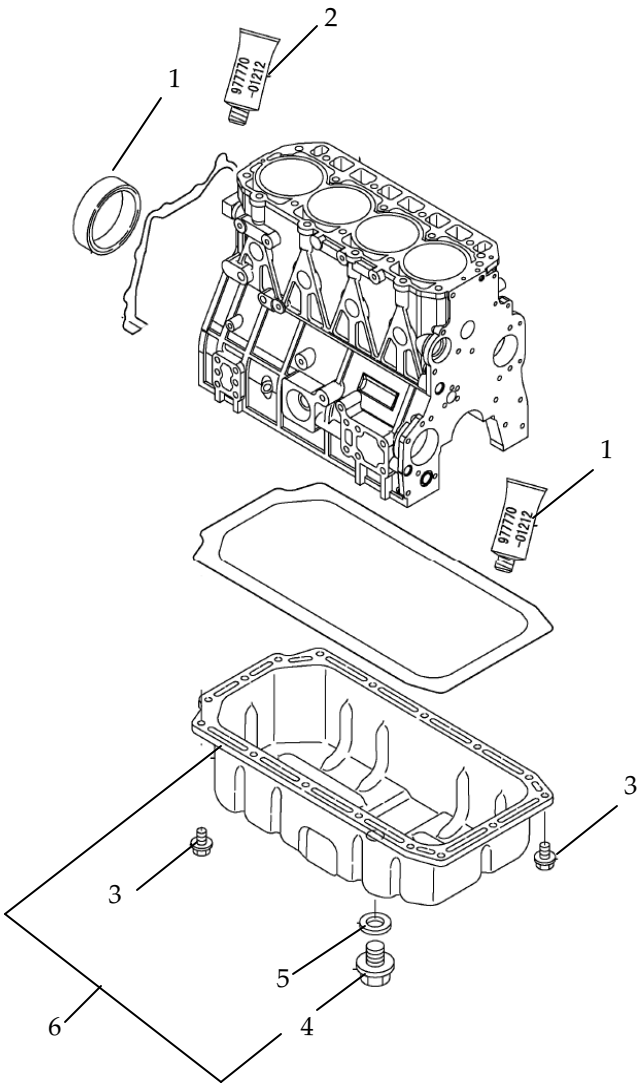
GOVERNOR ASSEMBLY—YANMAR TIER III DIESEL (ONLY)



Item	Part Number	Qty	Description
1	26106-080252	3	BOLT, M8 X 25 PLATED
2	24341-000480	1	O-RING 1A S-48.0
3	26106-060252	10	BOLT, M6 X 25 PLATED
4	23887-120002	1	PLUG, M12 HEX
5	22190-120000	1	SEAL WASHER 12(BOLT)
6	158560-61050	1	GASKET
7	158553-61780	1	GEAR, SENSOR
8	129008-61301	1	NUT, GOVERNOR WEIGHT
9	26106-060162	1	BOLT, M6 X 16 PLATED
10	158557-61720	1	SENSOR

POWER TRAIN

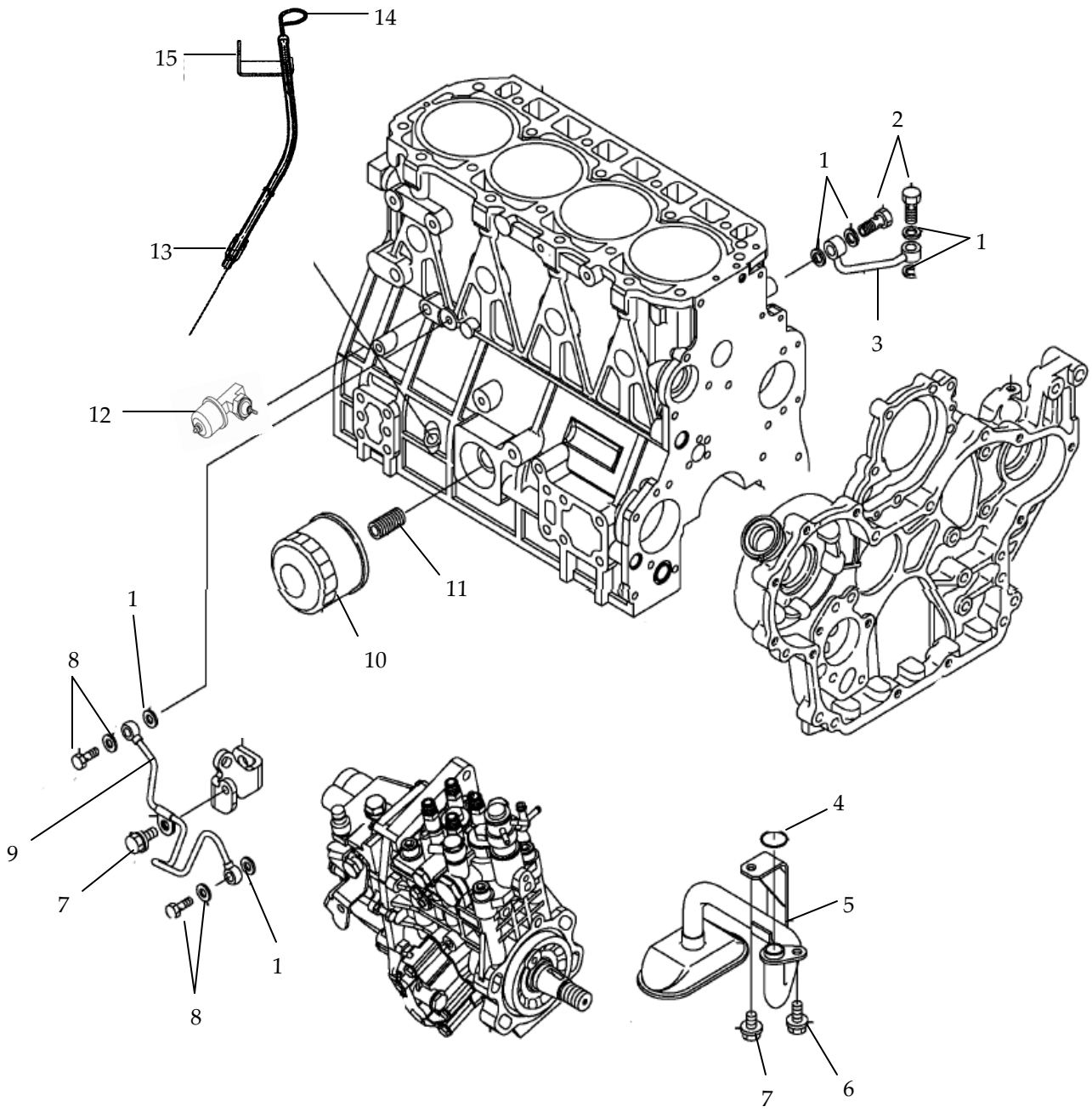
OIL PAN ASSEMBLY



Item	Part Number	Qty	Description
1	122916-01790	1	SEAL
2	977770-01212	1	GASKET, LIQUID
3	26106-080122	16	BOLT M8 X 12 PLATED
4	119640-01640	1	DRAIN PLUG
5	22190-220002	1	SEAL WASHER 22S
6	129916-01710	1	OIL PAN ASSEMBLY INCLUDES ITEMS 4 & 5

POWER TRAIN

LUBE — OIL SYSTEM



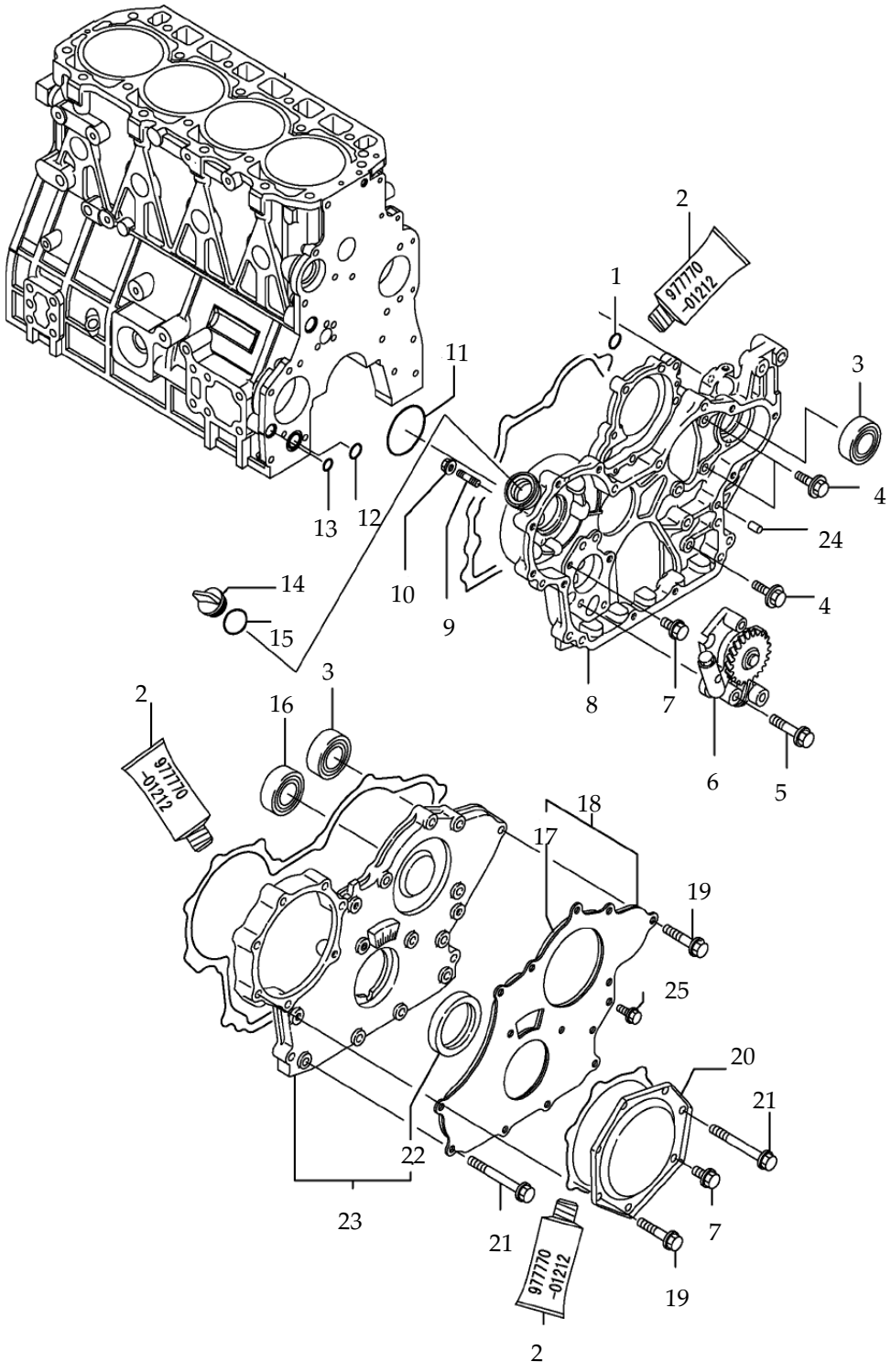
POWER TRAIN

LUBE — OIL SYSTEM

Item	Part Number	Qty	Description
1	22190-080002	6	SEAL WASHER 8S
2	105010-39140	2	BOLT, PIPE JOINT
3	129930-39050	1	PIPE
4	129900-32030	1	O-RING P20
5	129953-35000	1	PIPE ASSEMBLY OIL INLET
6	26106-080162	1	BOLT, M8 X 16 PLATED
7	26106-080122	2	BOLT M8 X 12 PLATED
8	129005-59830	2	BOLT ASSEMBLY, JOINT
9	129907-39061	1	PIPE ASSEMBLY LUBE OIL
10	129150-35153	1	OIL FILTER ELEMENT
11	119000-35140	1	STUD LUBE OIL FILTER
12	A-TT4-00651-1	1	OIL PRESSURE SENDING UNIT
13	119260-34810	1	GUIDE, DIPSTICK
14	129907-34811	1	DIPSTICK
15	129928-34850	1	TUBE, DIPSTICK
16	24311-240100	1	O-RING, DIPSTICK(NOT SHOWN)

POWER TRAIN

GEAR HOUSING



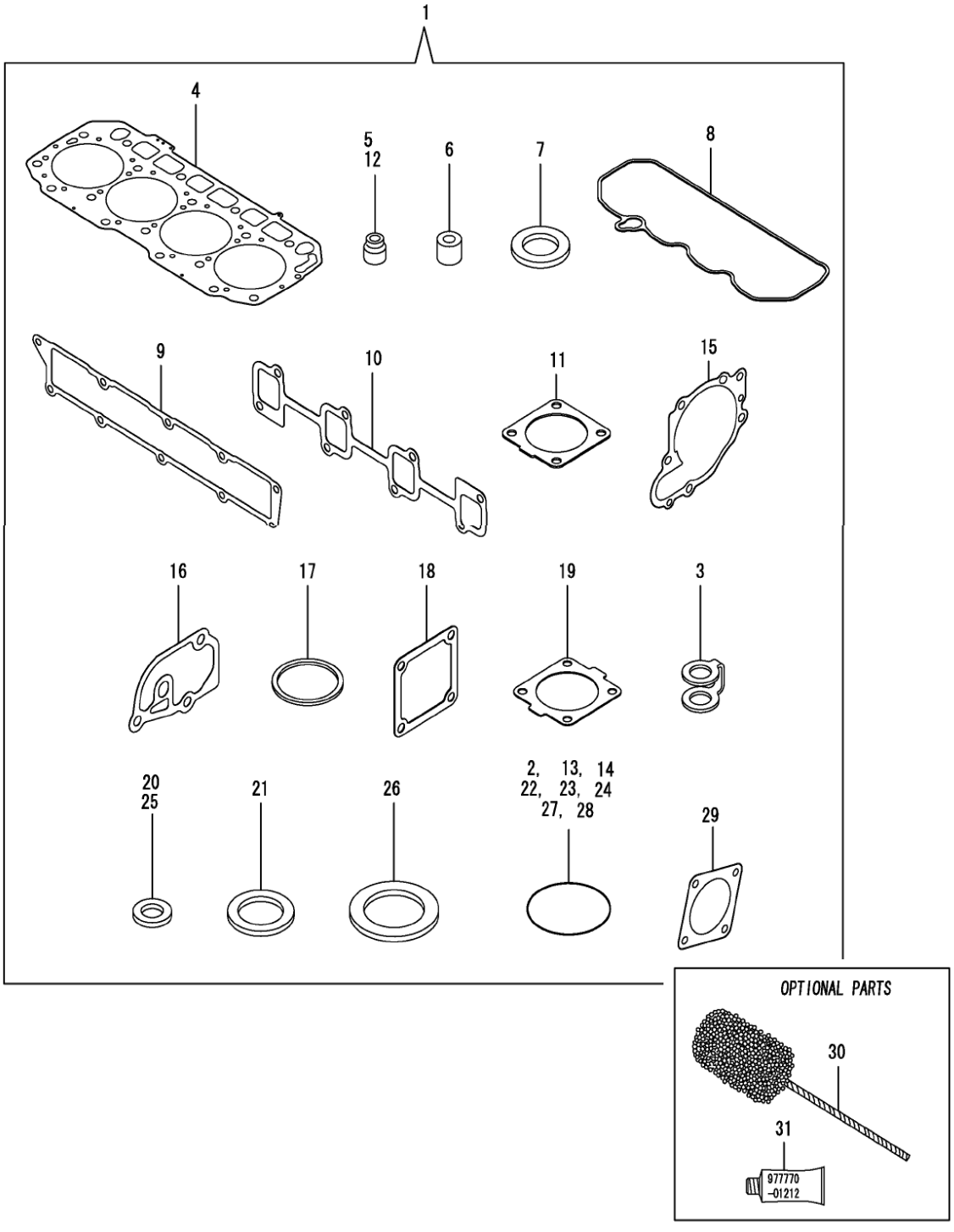
POWER TRAIN

GEAR HOUSING

Item	Part Number	Qty	Description
1	24311-000070	1	O-RING 1A P7.0
2	977770-01212	3	GASKET, LIQUID
3	129900-26250	2	BALL BEARING
4	26106-080202	3	BOLT, M8 X 20 PLATED
5	26106-080452	3	BOLT, M8 X 45 PLATED
6	129900-32001	1	OIL PUMP ASSEMBLY
7	26106-080162	3	BOLT, M8 X 16 PLATED
8	129962-01500	1	CASE, GEAR
9	26216-100302	4	STUD, BOLT
10	26306-100002	4	NUT
11	24351-030750	1	PACKING, 3075
12	129900-32030	1	O-RING P20
13	129900-32040	1	O-RING P14
14	124160-01751	1	OIL FILLER CAP
15	24311-000320	1	O-RING 1A P32.0
16	129900-14140	1	BEARING #6205
17	129900-01870	1	SPONGE
18	129900-01850	1	COVER ASSEMBLY INCLUDES ITEM 20
19	26106-080402	10	BOLT M8 X 40 PLATED
20	129900-01740	1	COVER, FI PUMP
21	129001-91810	7	BOLT, M8 X 70 PLATED
22	129900-01780	1	SEAL, OIL
23	729907-01550	1	HOUSING ASSY COVER INCLUDES ITEM 25
24	129100-01580	4	PARALLEL PIN 8 X 16
25	26106-080162	3	BOLT, M8 X 16 PLATED

POWER TRAIN

ENGINE GASKETS TIER II



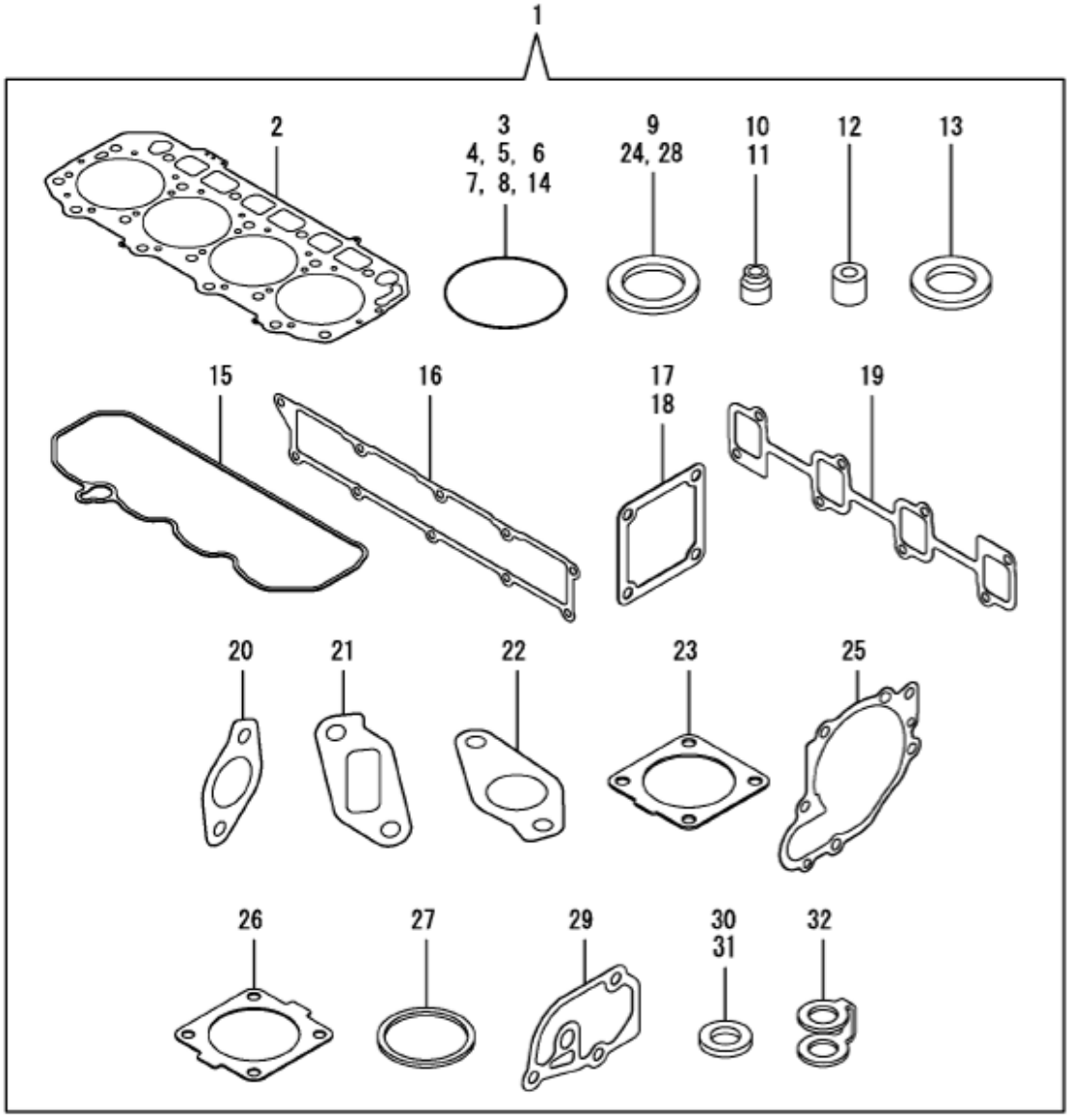
POWER TRAIN

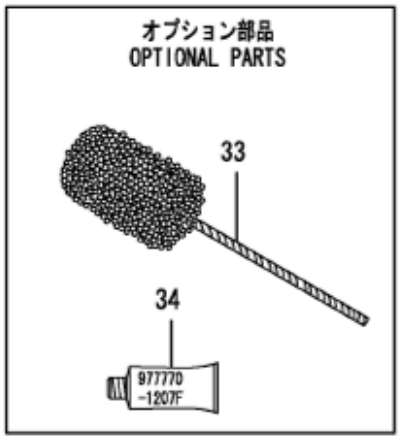
ENGINE GASKETS TIER II

Item	Part Number	Qty	Description
1	729907-92760	1	GASKET SET
2	24341-000240	1	O-RING 1A S-24.0
3	123907-59550	5	PACKING, FUEL RETURN
4	129907-01331	1	CLYLINDER HEAD GASKET
5	124160-11340	8	SEAL, VALVE STEM
6	119802-11870	4	PROTECTOR NOZZLE
7	119625-11880	4	SEAT, NOZZLE
8	129907-11310	1	HEAD COVER GASKET
9	129907-12110	1	INTAKE MANIFOLD GASKET
10	129900-13251	1	EXHAUST MANIFOLD GASKET
11	129930-13200	1	GASKET, SILENCER
12	124950-11340	8	SEAL, VALVE STEM
13	129900-32030	2	O-RING P20
14	129900-32040	1	O-RING P14
15	129900-42020	1	WATER PUMP GASKET
16	129900-49870	1	CASE GASKET
17	121850-49550	1	THERMOSTAT GASKET
18	121850-77021	1	GASKET
19	121850-49540	1	THERMOSTAT HOUSING GASKET
20	23414-080000	3	GASKET 8, ROUND
21	124465-44950	2	GASKET 16
22	24311-000070	1	O-RING 1A P7.0
23	14311-000120	8	O-RING 1A P12.0
24	24311-000320	2	O-RING 1A P32.0
25	22190-080002	7	SEAL WASHER 8S
26	22190-220002	1	SEAL WASHER 22S
27	24351-030750	1	PACKING 3075
28	24321-000850	1	O-RING 1A G85.0
29	124240-01883	1	GASKET
30	129400-92450	1	FLEX HONE
31	977770-01212	1	GASKET, LIQUID

POWER TRAIN

ENGINE GASKETS—YANMAR TIER III DIESEL





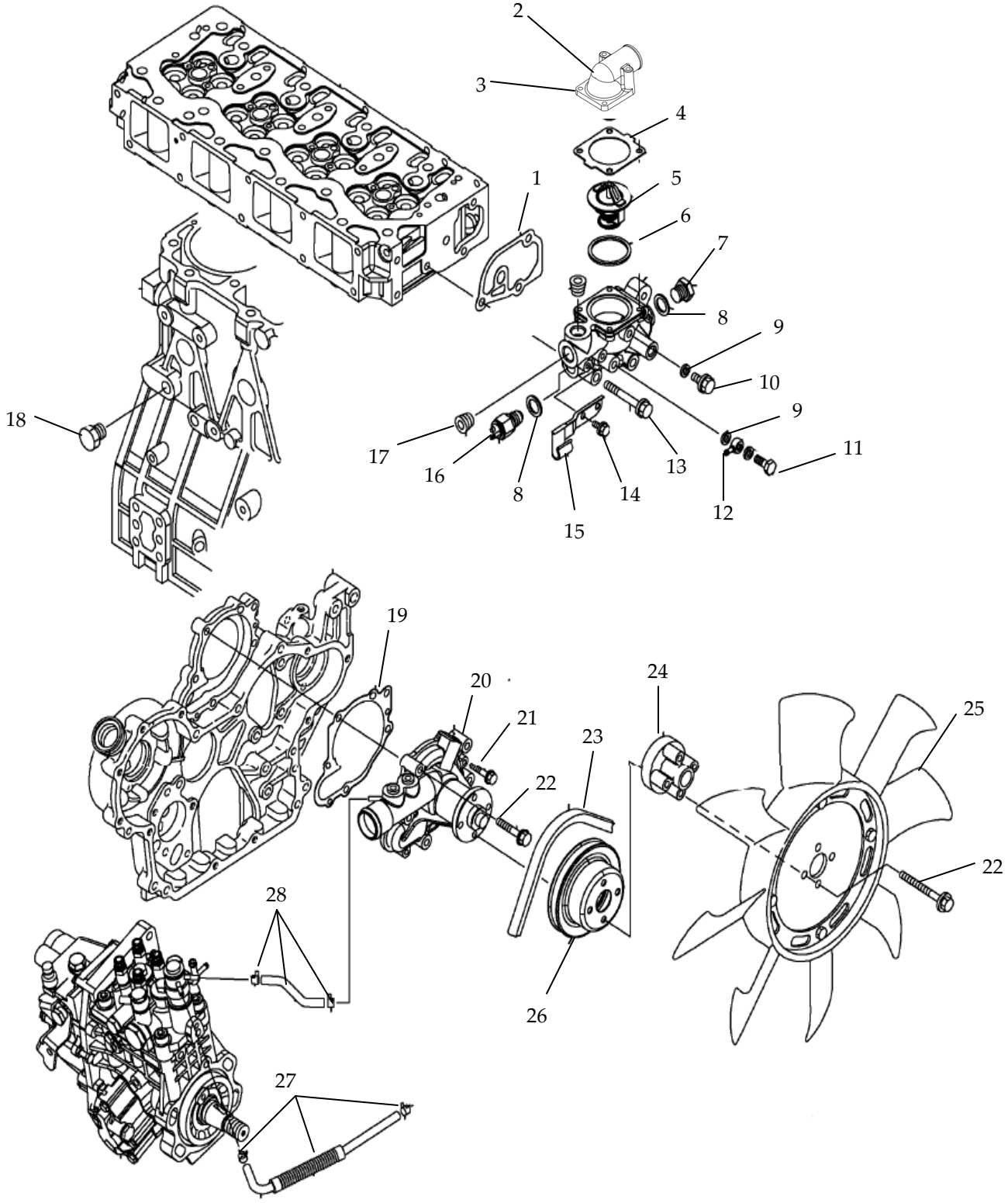
POWER TRAIN

ENGINE GASKETS—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	729927-92760	1	GASKET SET
2	129907-01331	1	CLYLINDER HEAD GASKET
3	129900-32030	2	O-RING P20
4	129900-32040	1	O-RING P14
5	24311-000070	1	O-RING 1A P7.0
6	24351-030750	1	PACKING 3075
7	24311-000320	2	O-RING 1A P32.0
8	24321-000850	1	O-RING 1A G85.0
9	22190-220002	1	SEAL WASHER 22S
10	119803-11340	8	SEAL, VALVE STEM
11	124160-11340	8	SEAL, VALVE STEM
12	119802-11870	4	PROTECOR NOZZLE
13	119625-11880	4	SEAT, NOZZLE
14	24311-000120	8	O-RING 1A P12.0
15	129933-11310	1	GASKET, HEAD COVER
16	129907-12110	1	GASKET, INTAKE MANIFOLD
17	119129-77020	1	GASKET
18	121850-77021	1	GASKET
19	129900-13251	1	GASKET, EXHAUST MANIFLOLD
20	129927-13810	1	GASKET, EGR PIPE
21	129927-13910	1	GASKET, EGR-V IN
22	129927-13920	1	GASKET, EGR-V OUT
23	129930-13201	1	GASKET, SILENCER
24	22190-080002	9	SEAL WASHER 8S
25	129900-42020	1	GASKET, CW-P
26	121850-49540	1	GASKET, THERMOSTAT
27	121850-49550	1	GASKET, THERMOSTAT
28	22190-120002	1	SEAL WASHER 12
29	129900-49870	1	GASKET, CASE
30	23414-080000	1	GASKET 8 ROUND
31	124465-44950	2	GASKET 16
32	123907-59550	5	PACKING, FUEL RETURN
33	129400-92450	1	FLEX HONE
34	977770-1207F	1	GASKET, LIQUID

COOLING SYSTEM

ENGINE COOLING SYSTEM



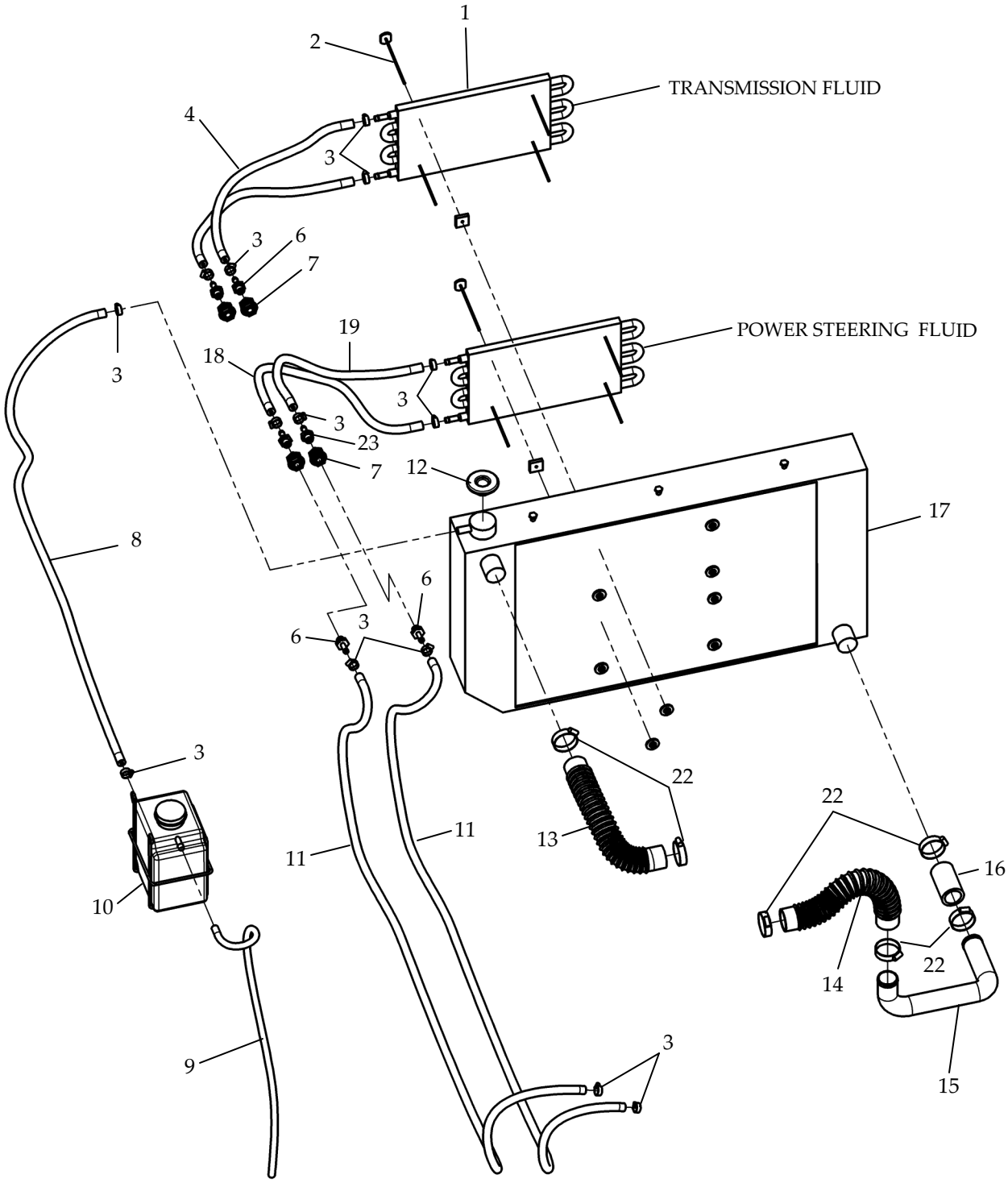
COOLING SYSTEM

ENGINE COOLING SYSTEM

Item	Part Number	Qty	Description
1	129900-49870	1	GASKET, CASE
2	129980-49530	1	THERMOSTAT HOUSING
3	26106-060202	4	BOLT, M6 X 20 PLATED
4	121850-49540	1	GASKET, THERMOSTAT HOUSING
5	121850-49810	1	THERMOSTAT
6	121850-49550	1	THERMOSTAT GASKET
7	121450-42450	1	PLUG M16
8	124465-44950	2	GASKET
9	23414-080000	3	GASKET
10	26106-080122	1	BOLT, M8 X 12 PLATED
11	105582-59150	1	BOLT, PIPE JOINT
12	23387-040800	1	JOINT
13	26106-080602	3	BOLT, M8 X 60 PLATED
14	26106-060122	2	BOLT, M6 X 12 PLATED
15	122907-49730	1	BRACKET
16	323-094	1	TEMPERATURE SENDING UNIT TIER II ONLY
16	129927-44900	1	TEMPERATURE SENDING UNIT TIER III ONLY
18	171056-49120	1	DRAIN PLUG
19	129900-42020	1	GASKET, WATER PUMP
20	129907-42000	1	WATER PUMP
21	26106-060302	2	BOLT, M6 X 30 PLATED
22	26106-080552	9	BOLT, M8 X 55 PLATED
23	25132-004200	1	V-BELT
24	A-SATS-00360	1	FAN SPACER
25	5136603081	1	FAN
26	129900-42450	1	PULLEY, WATER PUMP
27	129907-49710	1	PIPE A, COOLING WITH CLAMPS
28	129907-49620	1	HOSE B ASSEMBLY, WATER
29	9440	1	REMOTE FAN BELT (NOT SHOWN)

COOLING SYSTEM

COOLING SYSTEM (TUGS MANUFACTURED BEFORE FEBRUARY 1, 2012 ONLY)



COOLING SYSTEM

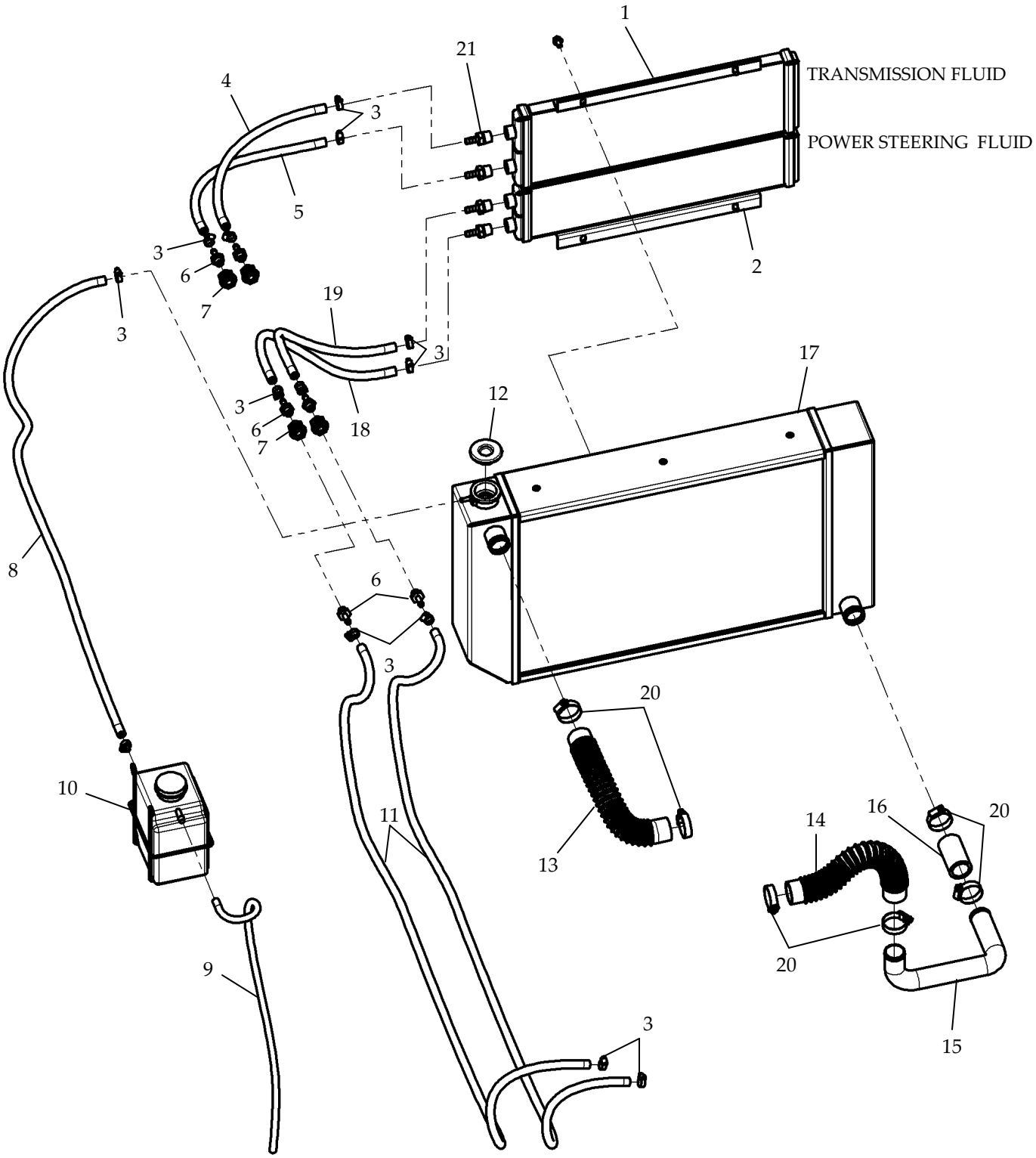
COOLING SYSTEM (TUGS MANUFACTURED BEFORE FEBRUARY 1, 2012 ONLY)

Item	Part Number	Qty	Description
1	A-TT4-00221-1	2	TRANSMISSION COOLER
2	1040	8	TRANS COOLER MOUNTING FASTENER
3	NPN	14	#4 HOSE CLAMP
4	H05705	1	5/16 HOSE SAE30R7 WK PR 23"
5	H05705	1	5/16 HOSE SAE30R7 WK PR 23"
6	05706B-104	4	FITTING, STRAIGHT 3/8 X 1/4
7	A-TT4-00280	4	BULKHEAD FITTING
8	H05705	1	5/16 HOSE SAE30R7 WK PR 50"
9	NPN	1	CLEAR NYLON HOSE 36"
10	A-TT10TD-00322	1	SURGE TANK
11	H10106	2	3/8" HYD HOSE WK PSI 350 84"
12	A-USAT5-00330	1	RADIATOR CAP
13	A-TT10-00323-1	1	RADIATOR HOSE
14	A-TT10-00323-1	1	RADIATOR HOSE
15	A-USAT5-00100	1	LOWER COOLING TUBE
16	A-TT4-00334	1	BULK HOSE 24048 3"
17	A-USAT5-00311-1	1	RADIATOR
18	H05705	1	5/16 HOSE SAE30R7 WK PR 40 "
19	H05705	1	5/16 HOSE SAE30R7 WK PR 30"
20	A-USAT5-50-15-1	1	UPPER SHROUD (NOT SHOWN)
21	A-USAT5-50-16-1	1	BOTTOM SHROUD (NOT SHOWN)
22	NPN	6	#24 HOSE CLAMP
23	A4493	2	1/4 PIPE 3/8 FITTING

*Hose length are based on current production. It may be necessary to cut hose to length.

COOLING SYSTEM

COOLING SYSTEM (TUGS MANUFACTURED AFTER FEBRUARY 1, 2012 ONLY)



COOLING SYSTEM

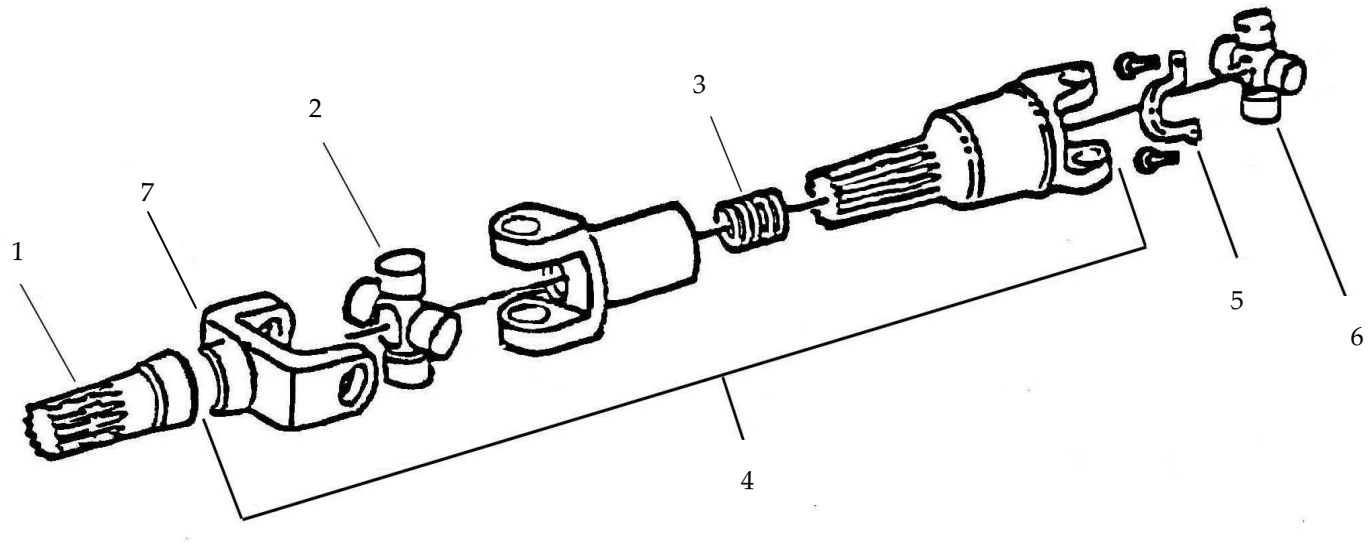
COOLING SYSTEM (TUGS MANUFACTURED AFTER FEBRUARY 1, 2012 ONLY)

Item	Part Number	Qty	Description
1	B-USAT5-00221-1	1	TRANSMISSION COOLER
2	B-USAT5-00221-2	1	POWERSTEERING COOLER
3	NPN	14	#4 HOSE CLAMP
4	H10106	1	3/8" HYD HOSE WK PSI 350 23"
5	H10106	1	3/8" HYD HOSE WK PSI 350 23"
6	05706B-104	4	FITTING, STRAIGHT 3/8 X 1/4
7	A-TT4-00280	4	BULKHEAD FITTING
8	H05705	1	5/16 HOSE SAE30R7 WK PR 50"
9	NPN	1	CLEAR NYLON HOSE 36"
10	A-TT10TD-00322	1	SURGE TANK
11	H10106	2	3/8" HYD HOSE WK PSI 350 84"
12	A-USAT5-00330	1	RADIATOR CAP
13	A-TT10-00323-1	1	RADIATOR HOSE
14	A-TT10-00323-1	1	RADIATOR HOSE
15	A-USAT5-00100	1	LOWER COOLING TUBE
16	A-TT4-00334	1	BULK HOSE 24048 3"
17	A-USAT5-00311-2	1	RADIATOR
18	H10106	1	3/8" HYD HOSE WK PSI 350 40 "
19	H10106	1	3/8" HYD HOSE WK PSI 350 30"
20	NPN	6	#24 HOSE CLAMP

*Hose length are based on current production. It may be necessary to cut hose to length.

DRIVELINE

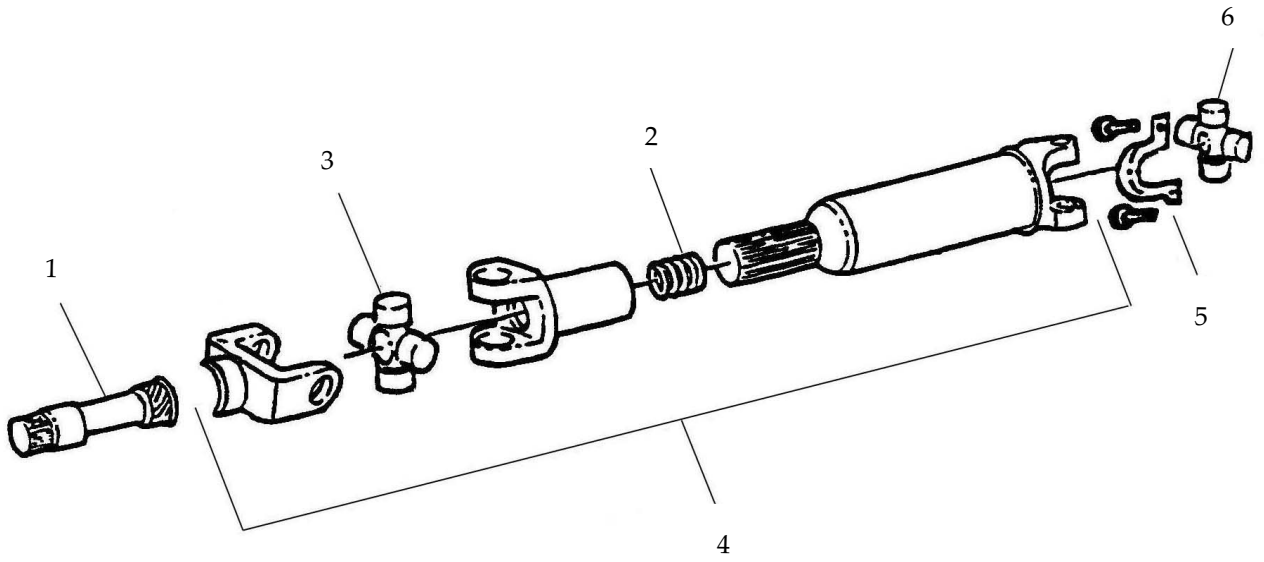
DRIVE SHAFT ASSEMBLY-FRONT



Item	Part Number	Qty.	Description
1	A-TT8-00201-1	1	TRANSMISSION OUTPUT YOKE SHAFT-FRONT
2	A-TT4-00132-1	1	CROSS BEARING FRONT D/S NEW STYLE
3	HC 2400	1	DRIVE SHAFT SPRING
4	A-TT8-00202-2	1	DRIVE SHAFT
5	A-TT4-00130	2	END YOKE STRAP AND BOLT KIT
6	A-TT4-00137-1	1	CROSS BEARING FRONT D/S NEW STYLE
7	2-4-1921	1	END YOKE

DRIVELINE

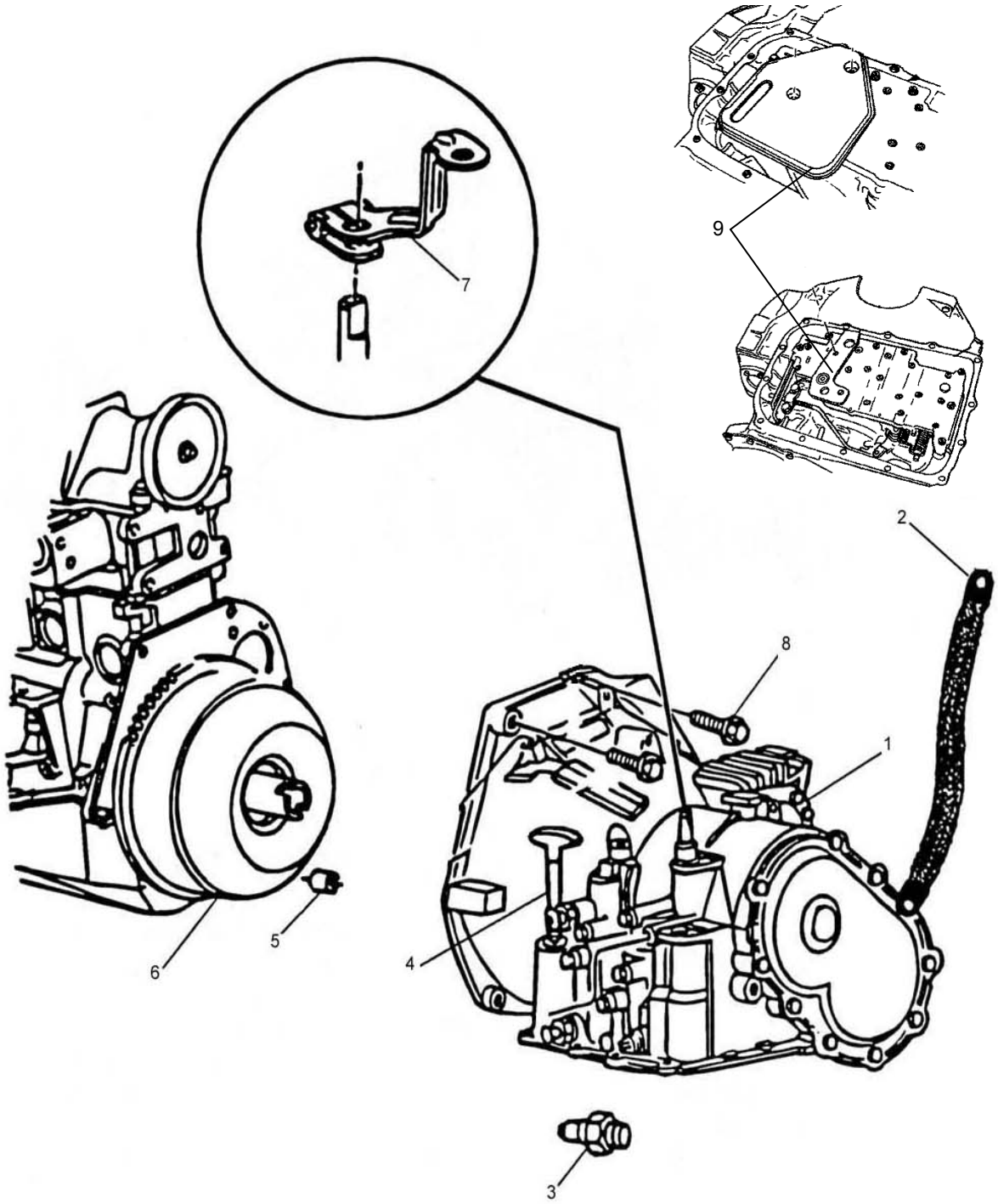
DRIVESHAFT ASSEMBLY—REAR



Item	Part Number	Qty.	Description
1	A-TT8-00201-2	1	TRANSMISSION OUTPUT YOKE SHAFT-REAR
2	HC 2400	1	DRIVE SHAFT SPRING
3	A-TT4-00132-1	1	CROSS BEARING FRONT D/S NEW STYLE
4	AB-USATS-00130	1	DRIVE SHAFT
5	A-TT4-00130	2	END YOKE STRAP KIT
6	A-TT4-00137	1	CROSS BEARING REAR D/S NEW STYLE

TRANSMISSION

TRANSAXLE MOUNTING & MISC. PARTS



TRANSMISSION

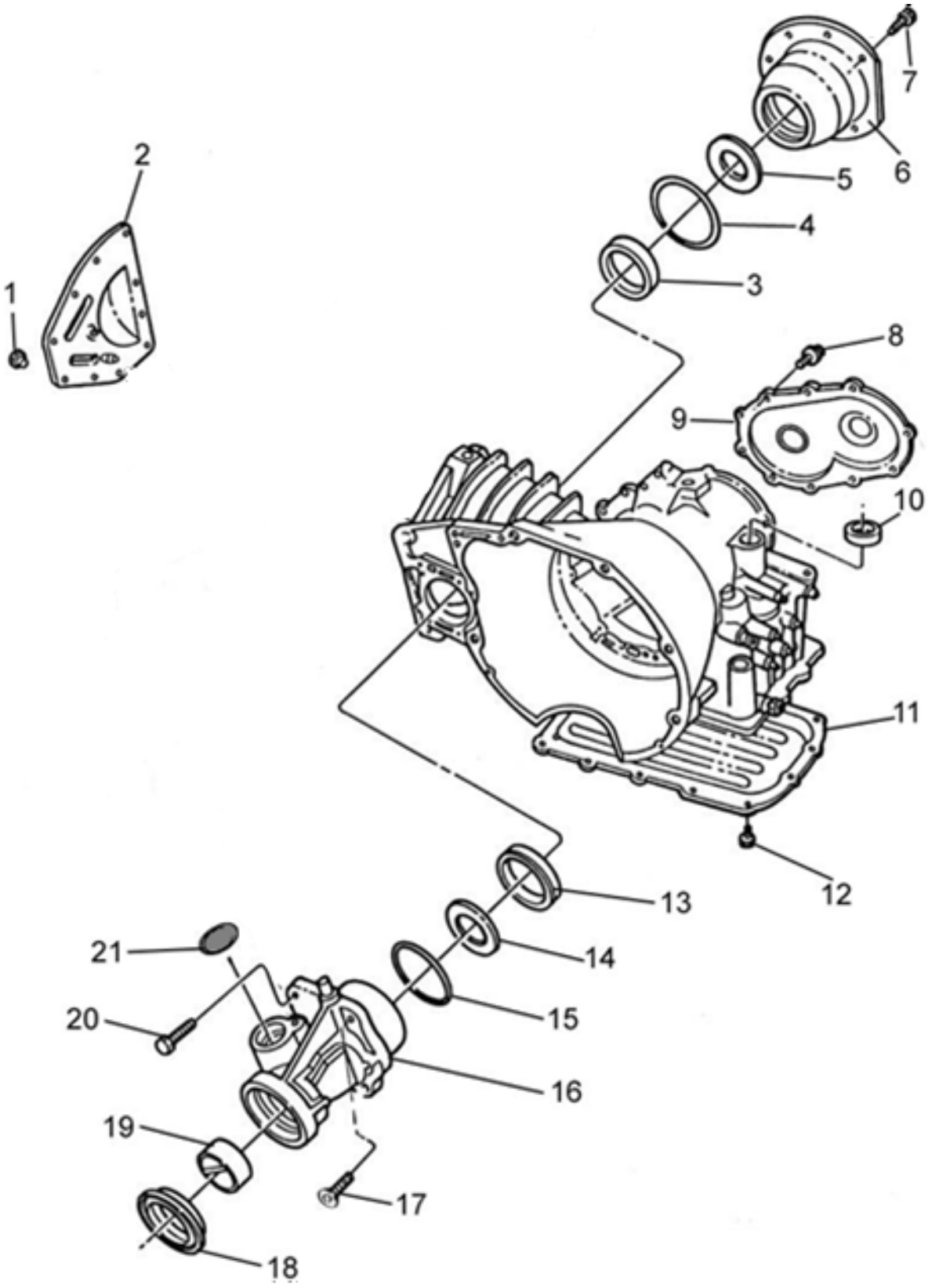
TRANSAXLE MOUNTING & MISC. PARTS

Item	Part Number	Qty	Description
1	A-TT5D-0018-1	1	TRANSMISSION
2	A-TN4-00707	1	GROUND STRAP
3	3747361	1	SWITCH-NEUTRAL STARTER & BACK UP LIGHT
4	4856444	1	DIPSTICK-TRANMISSION FLUID
5	5240849	2	DOWEL PIN-TRANS TO ENGINE ALIGNMENT
6	*4778718	1	TORQUE CONVERTER
7	A-TT4-00419	1	TRANSAXLE SHIFT LEVER-MANUAL CONTROL
8	6501741	2	SCREW-HEX CAP-WITH WASHER M12-1.75 X 30
9	85705	1	GASKET & FILTER MAINTENANCE PACKAGE
10	2926502	1	PLUG-TRANS NEUTRAL SWITCH(NOT SHOWN)

*Torque convertors may vary. Please contact Eagle for further information.

TRANSMISSION

TRANSAXLE CASE EXTENTION & RETAINER



TRANSMISSION

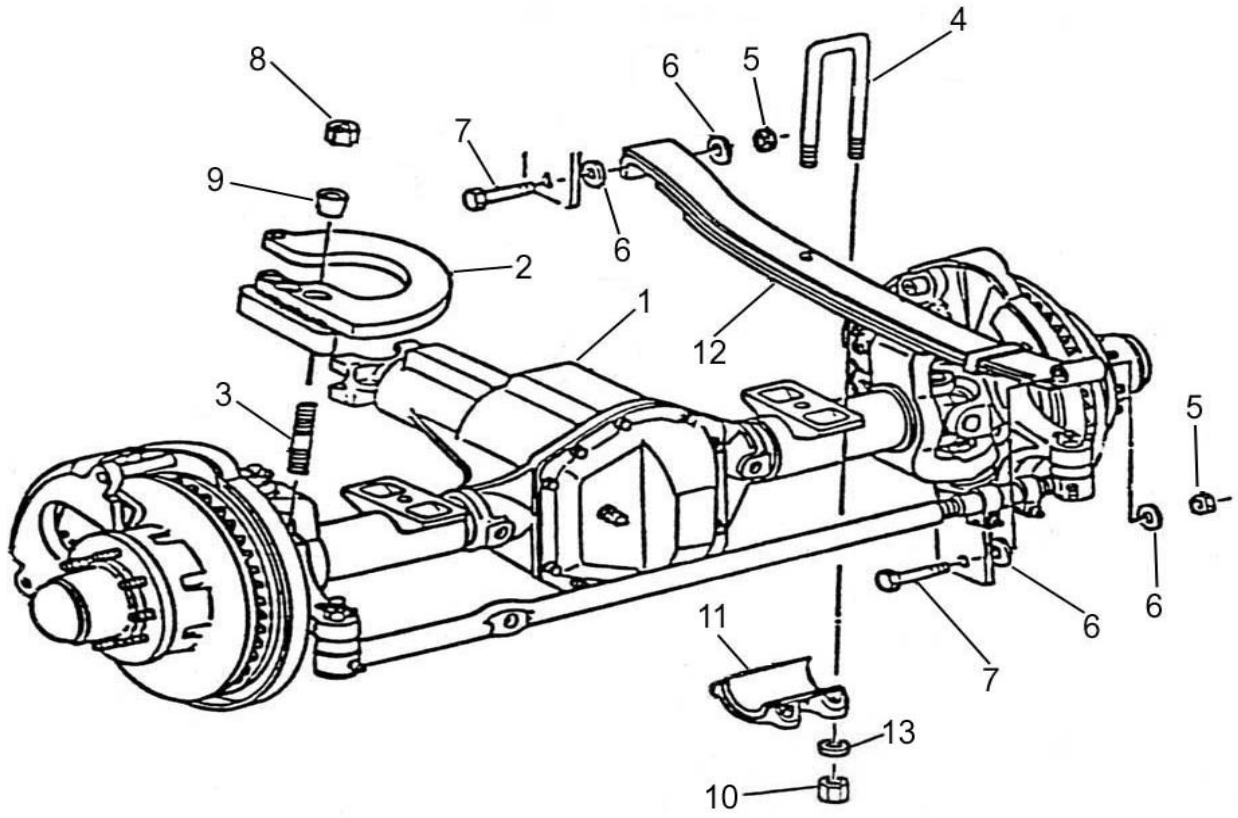
TRANSAXLE CASE EXTENTION & RETAINER

Item	Part Number	Qty	Description
1	6501474	10	SCREW-HEX CAP-WASH M8-1.25 X 16
2	4471573	1	PAN
3	NPN	1	CUP(NOT SOLD SEPARATELY)
4	4504568	1	SPACER KIT
5	4269787	1	RETAINER, OIL
6	4329829	1	RETAINER, BEARING
	6500368	6	SCREW-HEX CAP-M8 X 1.25 X 23
7	NPN	6	SCREW-HEX CAP-WASH HEAD M8-1.25 X 2
8	NPN	10	SCREW-HEX CAP M8-1.25 X 15
9	4659342	1	COVER, TRANS. END
	82180	1	RTV SEALANT
	6501474	10	SCREW-HEX CAP WASH M8-1.25 X 16
10	3878447	1	SEAL, MANUAL VALVE SHAFT
11	4471573	1	PAN, TRANSAXLE OIL
12	6501474	12	SCREW-HEX CAP WASH M8-1.25 X 16
	6101285	1	SCREW-HEX CAP-WASH M6-1 X 16
13	4567022	1	CUP
14	4567494	1	RETAINER
15	6500111	1	O-RING
16	A-TT5D-00011-MOD	1	*TRANSMISSION CONE
	6500511	4	SCREW-HEX CAP-WASH M8-1.25 X 33
17	NPN	2	M8 HEX HEAD SCREW
18	4412522	2	SEAL
19	NPN	1	BUSHING (SERVICED IN EXT.)
20	NPN	4	SCREW-HEX CAP WASH HEAD M8-1.25 X 30
21	A-TT4-00658	1	TRANS EXP PLUG

*PLEASE HAVE TUG MODEL AND SERIAL NUMBER AVAILABLE WHEN ORDERING ITEM 16

AXLES

AXLE ASSEMBLY—FRONT DRIVE (ALL WHEEL DRIVE)

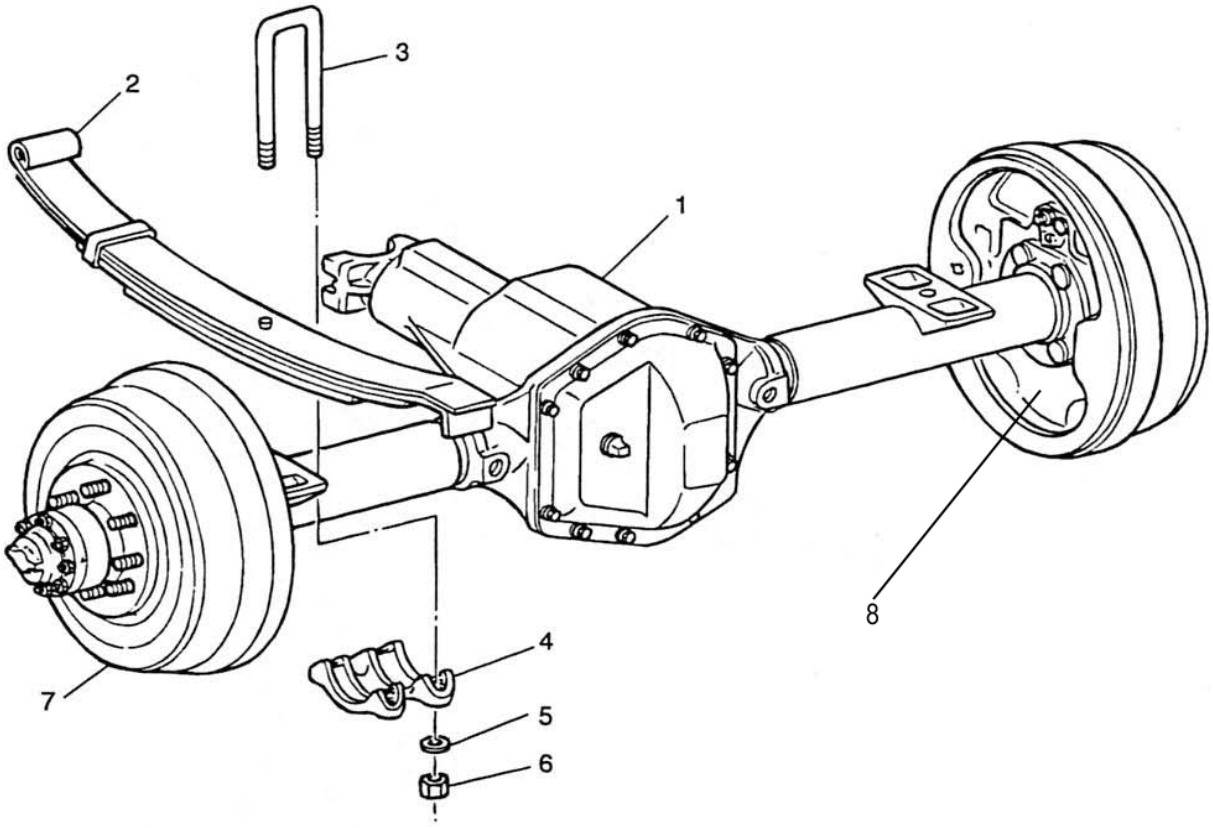


Item	Part Number	Qty	Description
1	A-TT8-00371	1	FRONT DRIVE AXLE ASSEMBLY
2	C-TT4-00113-3-MACH	1	STEERING ARM - USATS
3	A-TT8-00115	3	STUD - STEERING ARM
4	A-TT4-00362-1	4	U-BOLT KIT
5	NPN	4	3/8X16 LOCK NUT
6	A-TT4-00119	12	NYLON WASHER
7	NPN	4	SCREW-HEX CAP 3/8-16X3.5
8	NPN	3	NUT 9/16-18 GR8
9	3965138	3	BUSHING
10	A-TT4-00365	8	*NUT, AXLE U-BOLT
11	A-TT4-00118-3	2	MACHINED AXLE CLAMP PLATE
12	A-TT4-00116	2	LEAF SPRING
13	A-TT4-00366	8	*WASHER, AXLE U-BOLT

*INCLUDED IN ITEM #4

AXLES

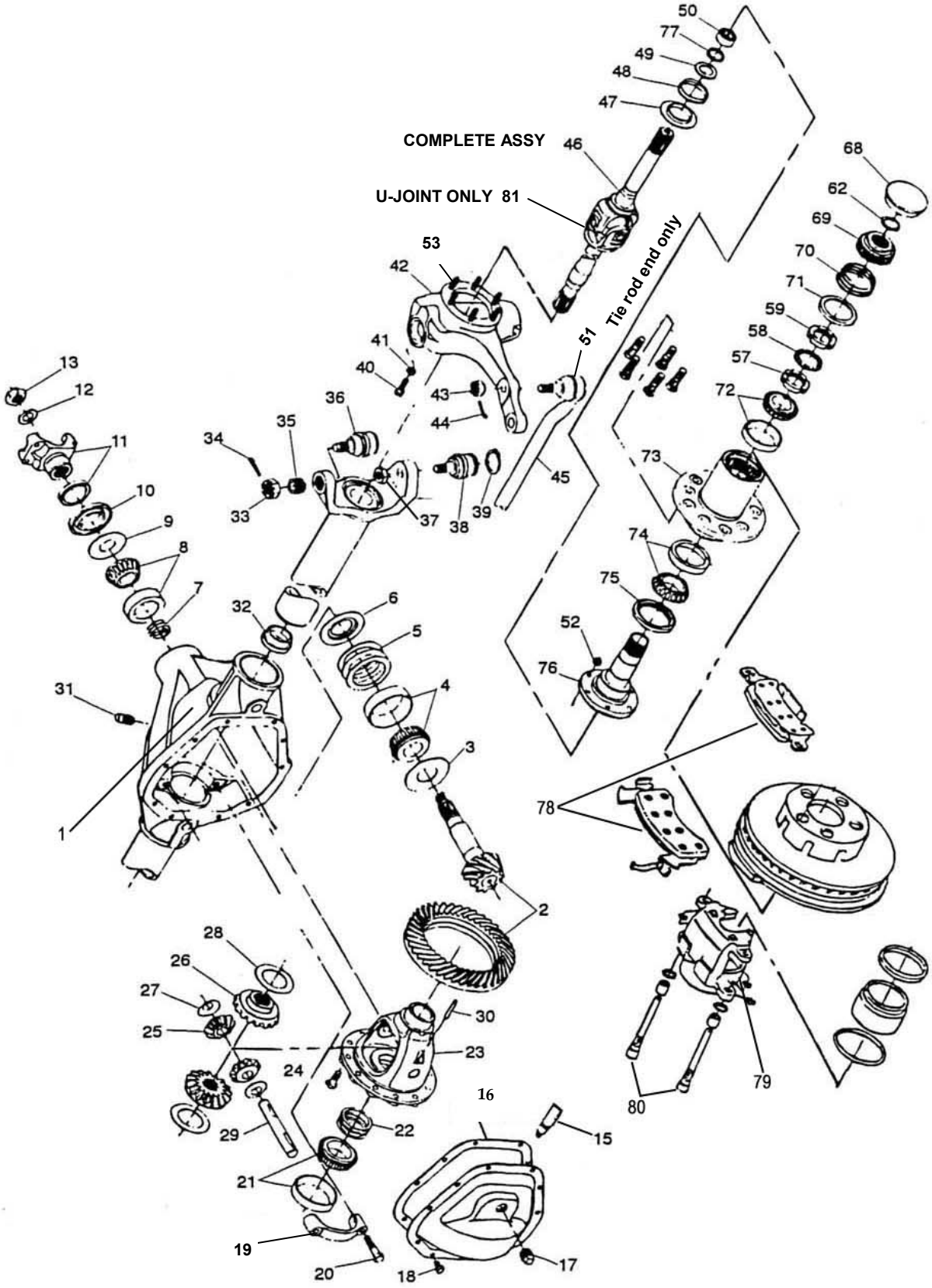
AXLE ASSEMBLY— REAR



Item	Part Number	Qty	Description
1	A-TT4-00361	1	REAR AXLE ASSEMBLY
2	A-TT4-00116	2	LEAF SPRING
3	A-TT4-00362-1	4	U-BOLT KIT *INCLUDES ITEMS 5 AND 6
4	A-TT4-00363	2	AXLE CLAMP PLATE
5	A-TT4-00366	8	WASHER
6	A-TT4-00365	8	NUT
7	4313905	1	LEFT HAND BACKING PLATE
8	4313904	1	RIGHT HAND BACKING PLATE

AXLES

AXLE ASSEMBLY BREAKDOWN—FRONT DRIVE (ALL WHEEL DRIVE)



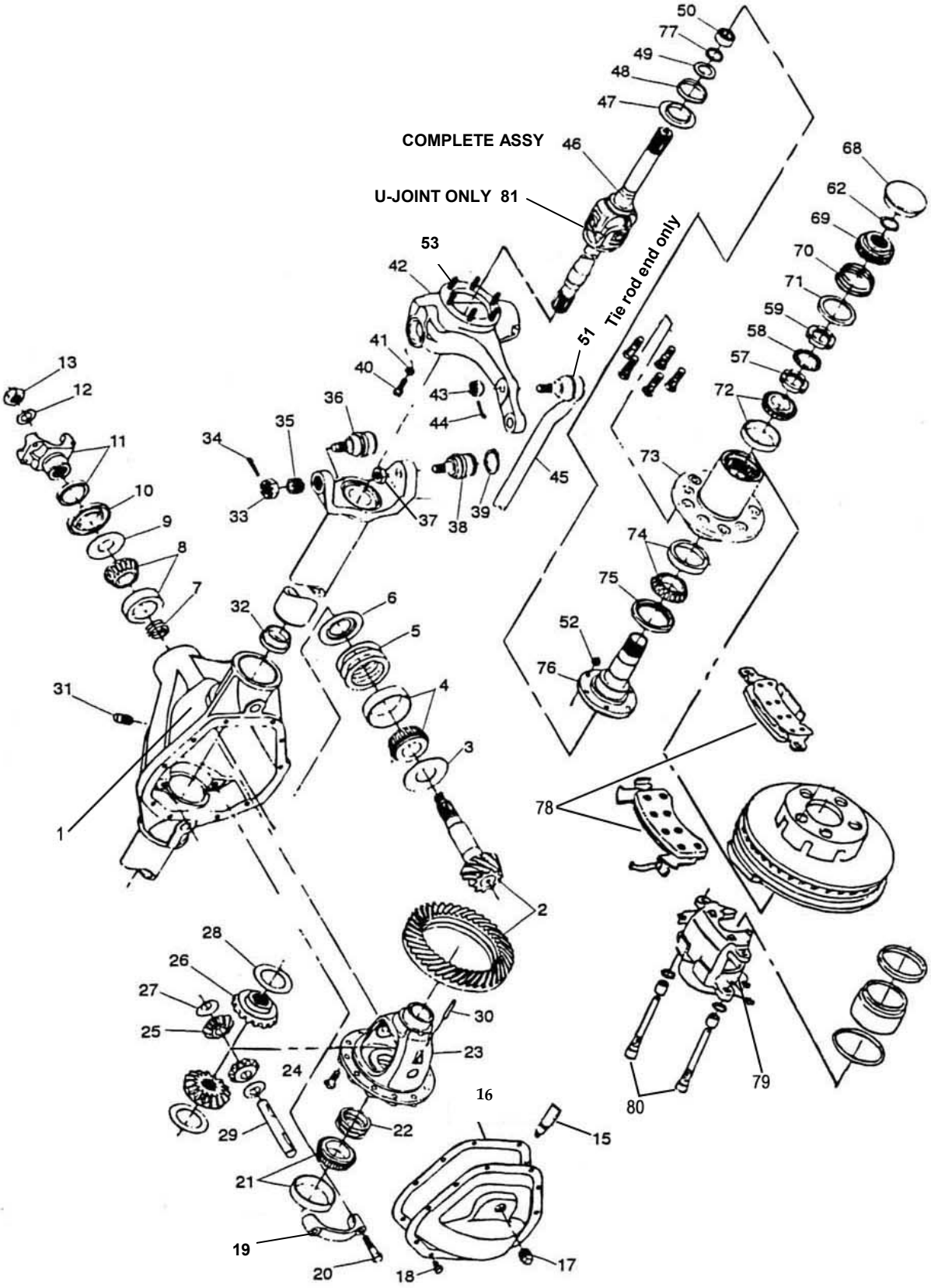
AXLES

AXLE ASSEMBLY BREAKDOWN—FRONT DRIVE (ALL WHEEL DRIVE)

Item	Part Number	Qty	Description
1	A-TT8-00371	1	COMPLETE AXLE ASSEMBLY
2	22404X	1	GEAR & PINION ASSEMBLY
3	30764	1	SLINGER-PINION OIL INNER
4	706031X	KIT	INNER PINION BEARING
5	706617X	KIT	SHIM-PINION ADJ INC ITEMS 5,7,12,13,15,15A
6	30765	1	BAFFLE-PINION OIL
7	706617X	KIT	SEE ITEM 5
8	706030	KIT	OUTER PINION BEARING & RACE
9	13575	1	SLINGER-PINION OIL OUTER
10	39118	1	SEAL-OIL
11	345761X	1	END YOKE ASSEMBLY
12	30186	1	WASHER-PINION NUT
13	30185	1	NUT-PINION
15	82180	AR	RTV SEALANT
16	34685	1	GASKET
17	36472	1	PLUG-COVER PLATE
18	34279	10	SCREW-FLANGE HD
19	N/A	2	CAP DIFFERENTIAL BEARING NOT SERVICED SEPERATELY
20	48632-1	2	1/2-13 X 2.25 GRD8 HEX BOLT
21	706032X	KIT	DIFFERENTIAL BEARING & RACE
22	706618X	KIT	DIFFERENTIAL SHIM INC ITEMS 22,15 &15A
23	25806X	1	CASE-DIFFERENTIAL ASSY
	32684	1	CASE-DIFFERENTIAL
24	41221	10	BOLT-DRIVE GEAR
25	17717	2	PINION-DIFFERENTIAL
26	706027X	2	GEAR-DIFF KIT INC ITEMS 15A & 24-29
27	13338-3	2	THRUST WASHER DIFFERENTIAL PINION
28	32121	2	THRUST WASHER DIFFERENTIAL GEAR
29	39194	1	SHAFT-DIFFERENTIAL
30	13449	1	PIN-ROLL
31	16979	1	VENT
32	36352	2	SEAL & GUIDE-SHAFT
33	44101	2	NUT-SLOTTED
34	500024-8	2	PIN-COTTER
35	35417	2	RING-ADJUSTING
36	40112-1	1	SOCKET ASSEMBLY-UPPER
37	35566	2	NUT-LOCK
38	40113-1	1	SOCKET ASSEMBLY-LOWER
39	35928	1	RING-SNAP

AXLES

AXLE ASSEMBLY BREAKDOWN—FRONT DRIVE (ALL WHEEL DRIVE)



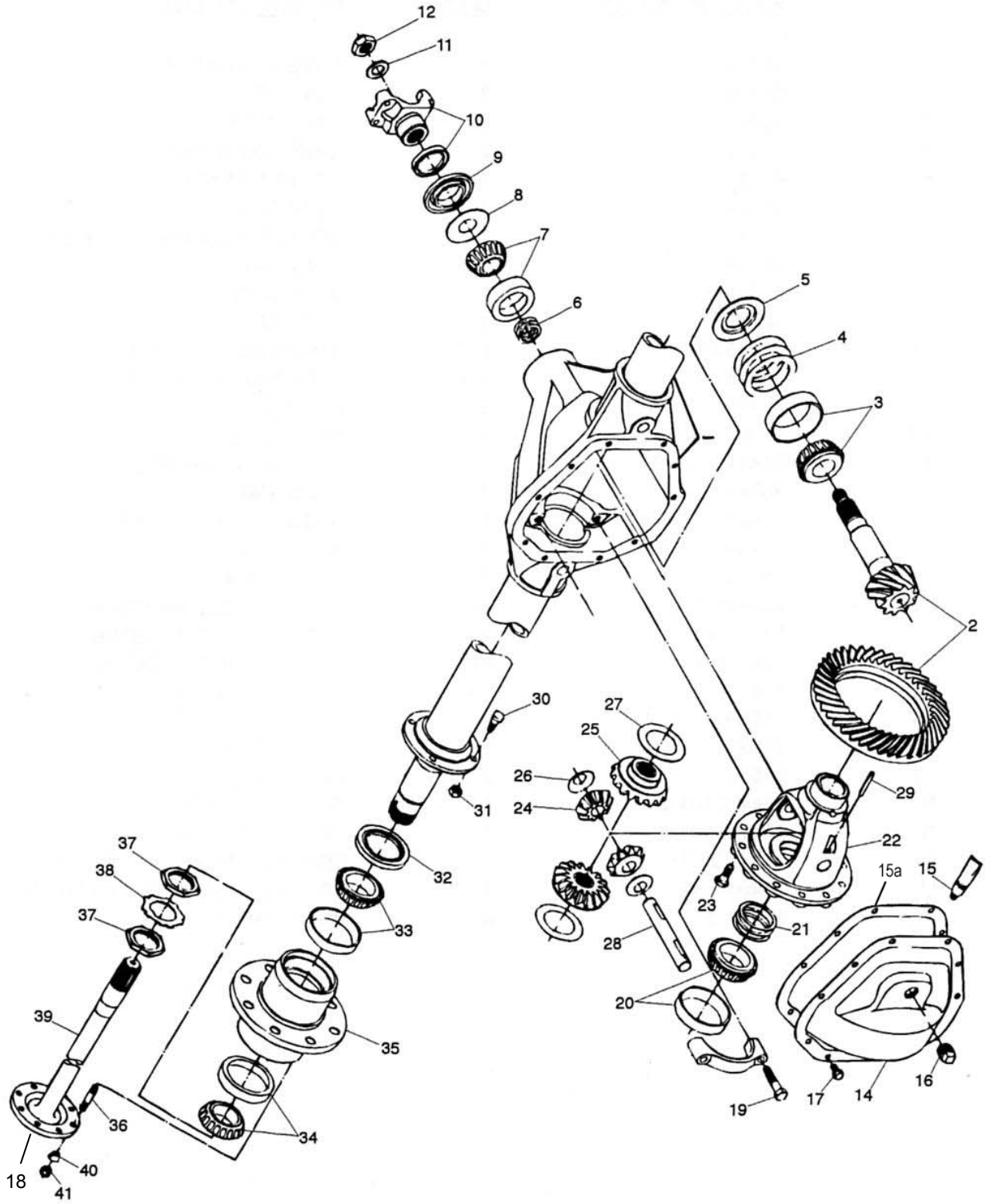
AXLES

AXLE ASSEMBLY BREAKDOWN—FRONT DRIVE (ALL WHEEL DRIVE)

Item	Part Number	Qty	Description
40	310026-2	2	BOLT-STOP
41	500381-3	2	NUT-LOCK
42	706653X	KIT	STEERING KNUCKLE L/H INCLUDES ITEMS 33-39,42 & 53
42	706652X	KIT	STEERING KNUCKLE R/H INCLUDES ITEMS 33-39,42 & 53
43	44101	2	NUT-SLOTTED
44	500024-4	2	PIN-COTTER
45	044TR115-16X	1	TIE ROD ASSEMBLY
46	660091-18	2	SHAFT & JOINT ASSY INC ITEM 47
47	36364	1	SLINGER
48	38128	2	SEAL-OIL
49	38106	2	SPACER
50	550759	2	BEARING-NEEDLE
51	044TR119	2	TIE ROD END ONLY FOR ITEM 45
52	500381-3	12	NUT-LOCK FOR ITEM 53
53	36326-2	12	STUD FOR ITEM 42
57	21588X	2	SPINDLE NUT
58	36569	2	LOCK-RETAINING NUT
59	31139	2	NUT-SPINDLE
62	31624	2	RING-SNAP
68	31552	2	CAP-HUB
69	42667	2	GEAR-AXLE DRIVE
70	35218	2	SPRING PRESSURE
71	32589	2	PLATE-SPRING RETAINING
72	706111X	KIT	OUTER WHEEL BEARING & RACE
73	044HU103	2	HUB & ROTOR ASSEMBLY
74	706690-X	KIT	INNER WHEEL BEARING & RACE
75	36366	2	AXLE SEAL
76	706570	KIT	SPINDLE ASSEMBLY INCLUDES ITEMS 48,49,50,77 & 76
	706527X	KIT	SPINDLE SEAL & BEARING INCLUDES ITEMS 50,77,48 & 49
77	36361	1	SEAL-OIL
78	RD52	1 SET	BRAKE PAD SET
79	18009659	1	CALIPER WITHOUT PADS -R/H
79	18009658	1	CALIPER WITHOUT PADS-L/H
79	044WC101-1	1	CALIPER ASSY WITH PADS L/H
79	044WC101-2	1	CALIPER ASSY WITH PADS R/H
80	5468226	1SET	ANCHOR BOLTS
81	5-297-1X	2	GREASABLE U-JOINT FOR ITEM 46

AXLES

AXLE ASSEMBLY BREAKDOWN—REAR DRIVE



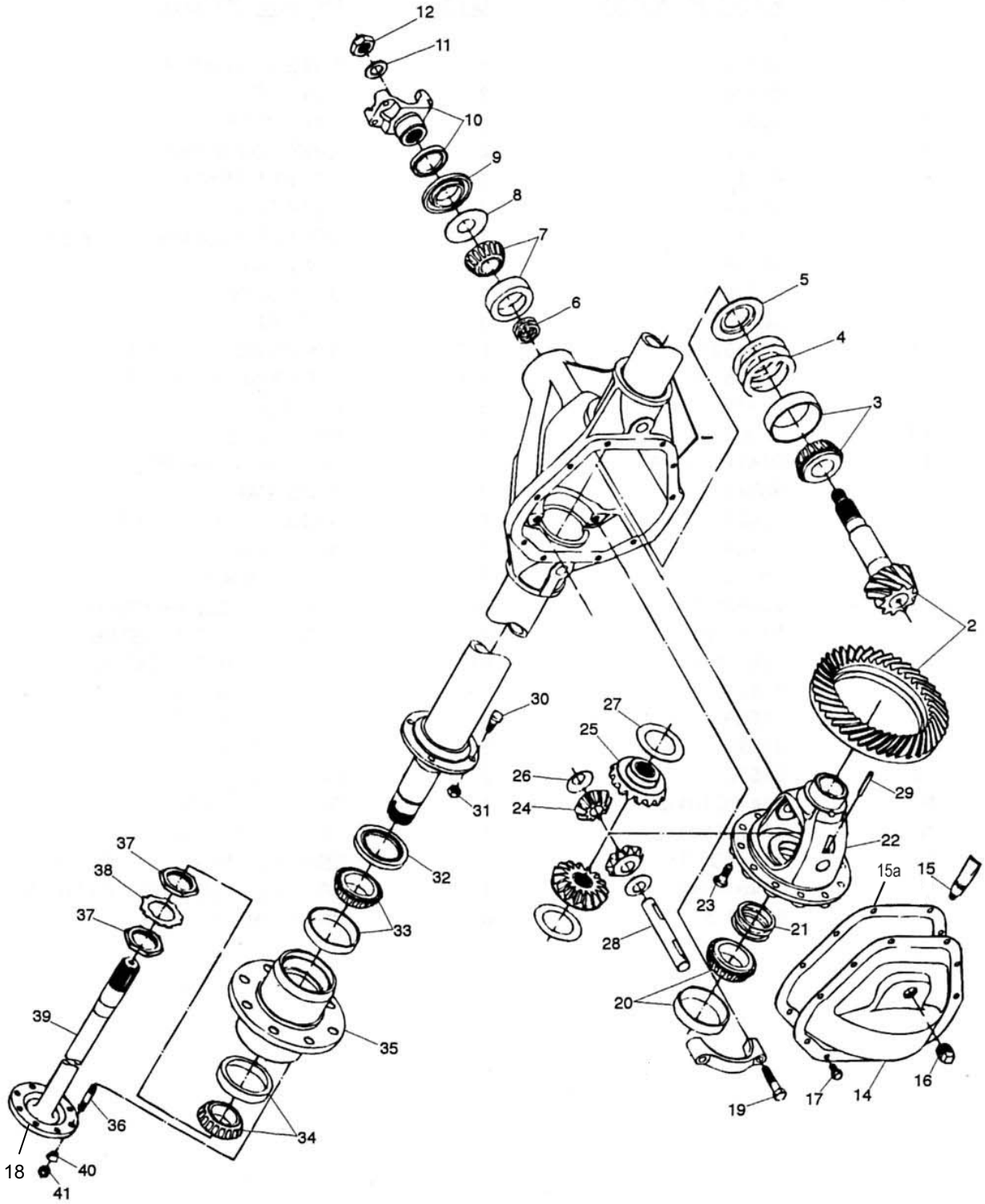
AXLES

AXLE ASSEMBLY BREAKDOWN—REAR DRIVE

Item	Part Number	Qty	Description
	A-TT4-00361	1	COMPLETE AXLE ASSEMBLY
2	706033-10X	KIT	DRIVE GEAR & PINION
3	706046X	KIT	INNER PINION BEARING & RACE
4	706672X	KIT	SHIM-DRIVE PINION ADJUSTING
5	30765	1	BAFFLE-PINION BEARING
6	706672X	KIT	SHIM-PINION BEARING ADJUSTING
7	706045X	KIT	OUTER PINION BEARING & RACE
8	30273	1	SLINGER-PINION BEARING
9	38427	1	SEAL-PINION
10	345731X	1	END YOKE ASSEMBLY
11	30275	1	WASHER-PINION NUT
12	30271	1	NUT-PINION
14	73597	1	COVER ASSEMBLY
15	82180		RTV SEALANT
15a	39697	1	COVER GASKET
16	98785	1	PLUG-PIPE SLOTTED
17	34822	10	SCREW-FLANGE HD
18	39697	1	AXLE SHAFT GASKET
19	48632-1	2	1/2-13 x 2.25 GRD8 BOLT BEARING CAP
20	706047X	KIT	BEARING & RACE
21	706673X	KIT	SHIM-DIFFERENTIAL BEARING
22	706669X	KIT	CASE-DIFFERENTIAL
23	30266	10	BOLT-DRIVE GEAR
24	SEE KIT ITEM 43 OR 44	KIT	PINION-DIFFERENTIAL
25	SEE KIT ITEM 43 OR 44	KIT	GEAR-DIFFERENTIAL
26	SEE KIT ITEM 43 OR 44	KIT	THRUST WASHER-PINION
27	SEE KIT ITEM 43 OR 44	KIT	THRUST WASHER-GEAR
28	SEE KIT ITEM 43 OR 44	KIT	SHAFT-DIFFERENTIAL
29	500598-21	1	LOCK-DIFFERENTIAL
30	36253	8	BOLT-BRAKE MANUFACTURING
31	36805	8	NUT-BRAKE MANUFACTURING
32	36240	2	SEAL-OIL
33	706071X	KIT	INNER WHEEL BEARING
34	706072X	KIT	OUTER WHEEL BEARING
35	36241	2	HUB & DRUM ASSEMBLY
36	36847	8	STUD-HUB

AXLES

AXLE ASSEMBLY BREAKDOWN—REAR DRIVE



AXLES

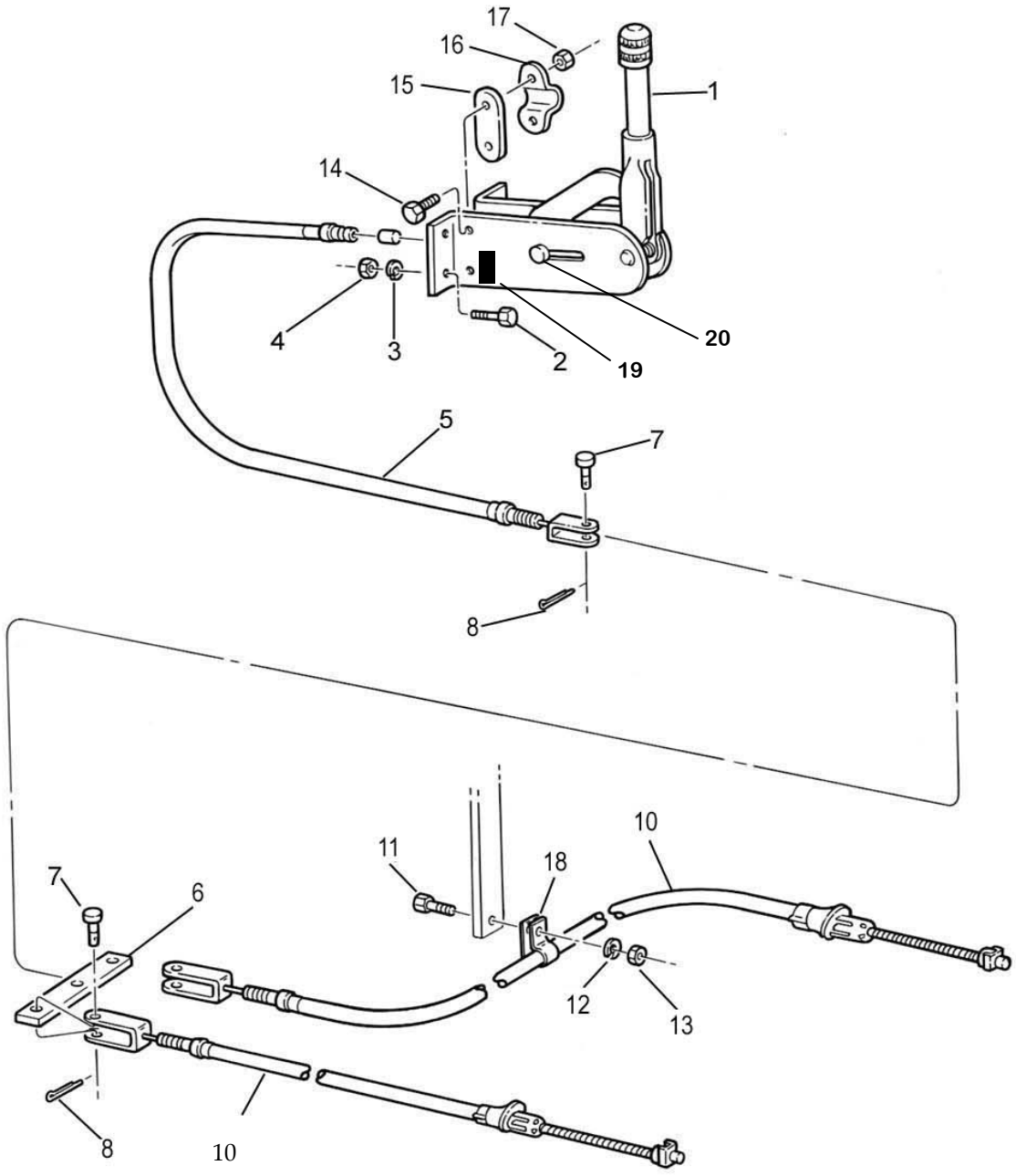
AXLE ASSEMBLY BREAKDOWN—REAR DRIVE CONT

Item	Part Number	Qty	Description
37	30636	4	NUT-SPINDLE
38	30637	2	LOCK WASHER WHEEL BEARING
39	34887-7	1	SHAFT-AXLE FLANGE LONG
	34887-10	1	SHAFT-AXLE FLANGE SHORT
40	31534	16	ADAPTER-STUD
41	36805	24	NUT-LOCK
42	16979	1	VENT
43	706671X	1	DIFF PARTS (STD) INC 15, 21-23, 29
44	707084X	1	DIFF PARTS (LTD SLIP) INC 15, 21, 23, 24, 26, 28, 29, 43-48

FOR AXLE TORQUE SPECS SEE MAINTENANCE SECTION

BRAKES

PARKING BRAKE ACTUATOR ASSEMBLY



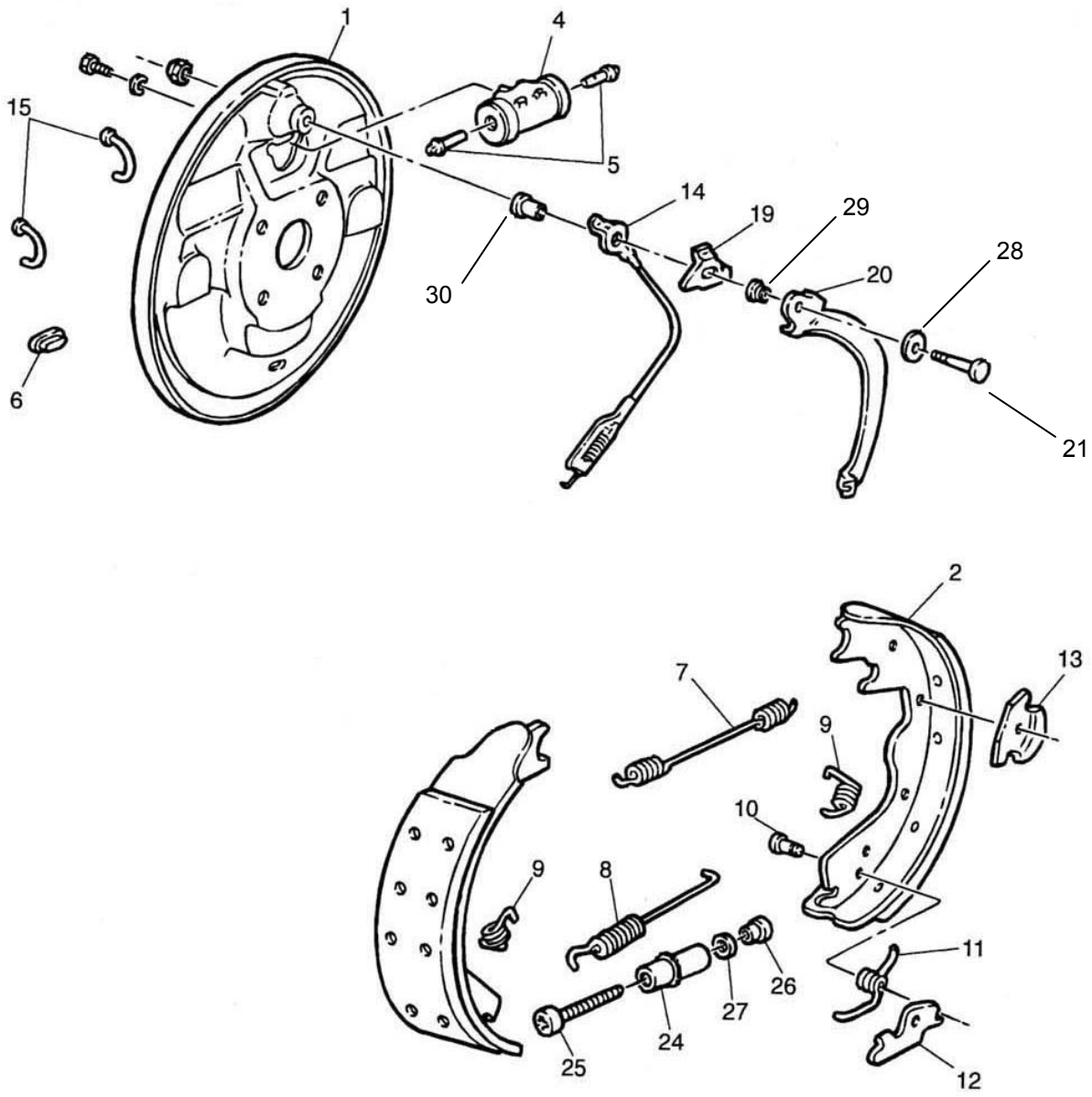
BRAKES

PARKING BRAKE ACTUATOR ASSEMBLY

Item	Part Number	Qty	Description
1	A-TT4-00141	1	HAND BRAKE
2	NPN	4	SCREW-HEX CAP-5/16-18 X 1
3	NPN	4	WASHER-FLAT-5/16
4	NPN	4	NUT-LOCK-5/16-18
5	B-TT4-00145	1	CABLE PRIMARY
6	A-TT4-00146	1	BAR EQUALIZER
7	A-TT4-00193	3	CLEVIS PIN
8	NPN	3	COTTER PIN
10	A-TT4-00150	2	PARKING BRAKE CABLE REAR LONG
11	NPN	1	SCREW-HEX CAP-14-20 X 1
12	NPN	1	WASHER-FLAT-1/4
13	NPN	1	NUT-LOCK-1/4-20
14	NPN	1	SCREW-HEX CAP-1/4-28 X 1
15	NPN	1	CABLE CLAMP PLATE
16	NPN	1	CABLE CLAMP HANDLE
17	NPN	2	NUT-LOCK-1/4-28
18	NPN	2	CABLE CLAMP
19	82050000	1	PROXIMITY SENSOR
20	81008429	1	PARKING BRAKE CONTACT PIN
21	82066700	1	BUZZLITE MOUNTING SCREW (NOT SHOWN)

BRAKES

DRUM BRAKE ASSEMBLY—REAR



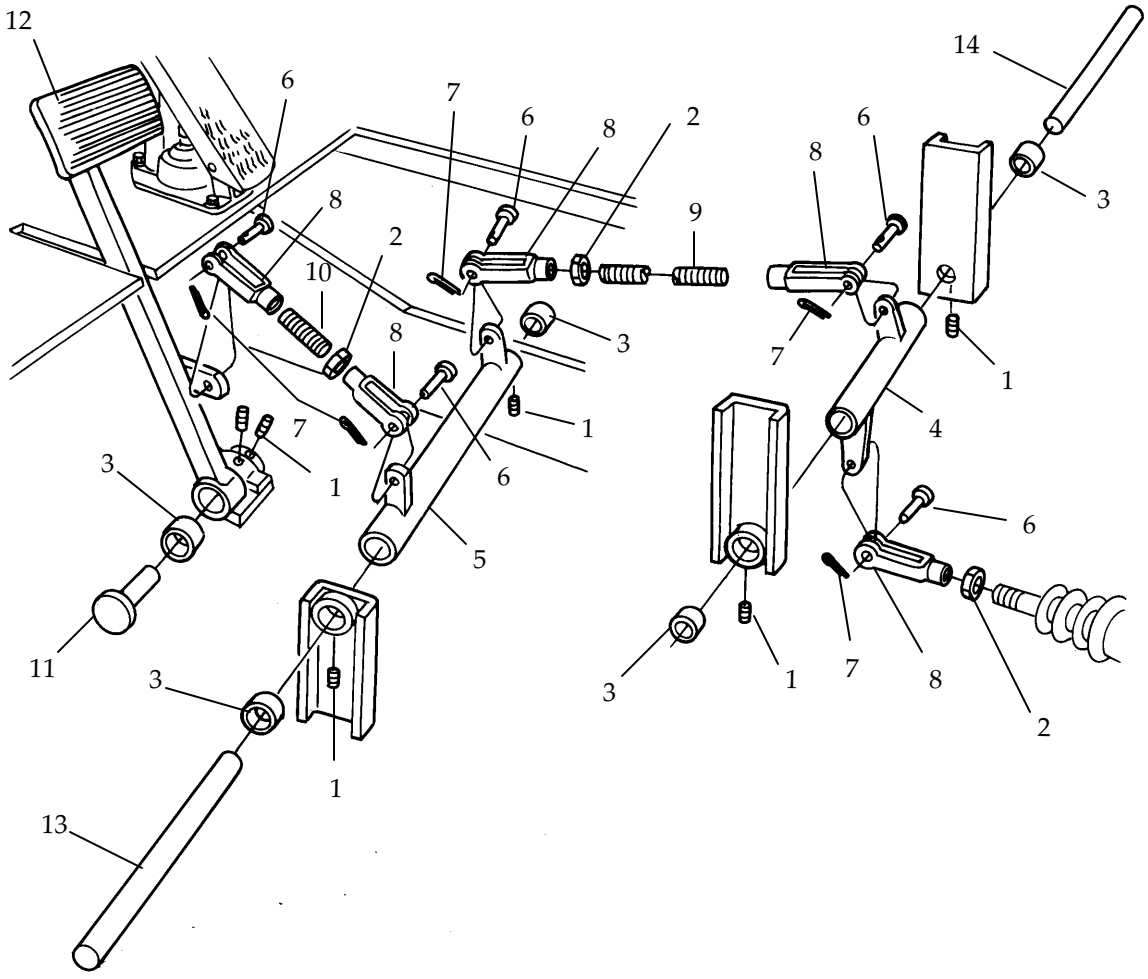
BRAKES

DRUM BRAKE ASSEMBLY—REAR

Item	Part Number	Qty	Description
	060WD101	1	BRAKE ASSEMBLY L/H
	060WD100	1	BRAKE ASSEMBLY R/H
1	4313905	1	BACKING PLATE L/H
1	4313904	1	BACKING PLATE R/H
2	FR357	1 SET	SHOE & LINING SET
4	2235585	1	CYLINDER ASSEMBLY L/H
4	2235586	1	CYLINDER ASSEMBLY R/H
5	315834	2	WHEEL CYLINDERS CONNECTING LINK
6	*SEE KIT BELOW	1	COVER
7	*SEE KIT BELOW	1	SPRING-UPPER
8	*SEE KIT BELOW	1	SPRING-LOWER
9	*SEE KIT BELOW	2	SPRING-HOLD DOWN
10	*SEE KIT BELOW	1	PIN
11	*SEE KIT BELOW	1	SPRING TENSION
12	*SEE KIT BELOW	1	BRAKE ADJUSTING LINK
13	*SEE KIT BELOW	1	CABLE GUIDE
14	*SEE KIT BELOW	1	CABLE ASSEMBLY
15	*SEE KIT BELOW	2	SPRING-HOLD DOWN
19	4383299	1	PARKING BRAKE CAM L/H
19	4383298	1	PARKING BRAKE CAM R/H
20	4383264	1	PARKING BRAKE LEVER (RIGHT)
20	4383265	1	PARKING BRAKE LEVER (LEFT)
21	4419698	1	BRAKE ANCHOR BOLT
24	*SEE KIT BELOW	1	BRAKE ADJUSTING SOCKET L/H
25	*SEE KIT BELOW	1	BRAKE ADJUSTING SCREW L/H
26	*SEE KIT BELOW	1	BRAKE ADJUSTING SOCKET
27	*SEE KIT BELOW	1	WASHER FLAT
28	3492670	1	WASHER
29	3492656	1	SPRING
30	4383600	1	SPACER
KIT	H2588	LEFT	BRAKE ADJUSTING KIT INCLUDES PART NUMBERS 6,10-14,20,24-27
KIT	H2589	RIGHT	BRAKE ADJUSTING KIT INCLUDES PART NUMBERS 6,10-14,20,24-27
KIT	H7146		BRAKE SPRING KIT INCLUDES PART NUMBERS 7,8,9,15

BRAKES

BRAKE ACTUATOR ASSEMBLY



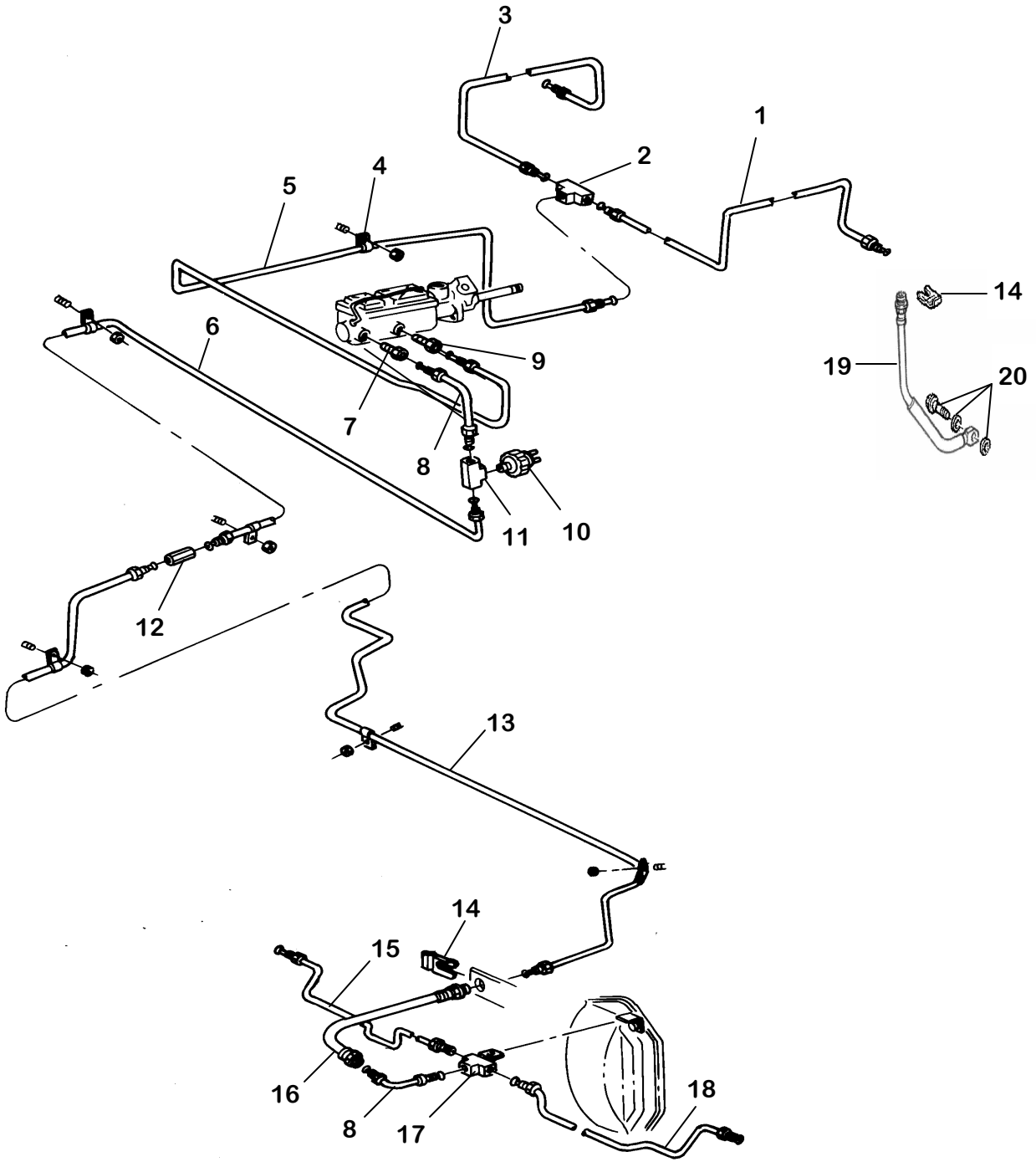
BRAKES

BRAKE ACTUATOR

Item	Part Number	Qty	Description
1	NPN	6	¼-20 SET SCREW
2	NPN	3	½-20 NUT
3	C-TT4-10188	5	THOMSON NYLINER BEARING
4	A-USAT5-50-13	1	BELL CRANK SHORT
5	A-USAT5-50-11	1	BELL CRANK LONG
6	A-TT4-00193	5	CLEVIS PIN
7	NPN	5	COTTER PIN
8	A-TT4-10192	5	CLEVIS
9	NPN	1	1/2-20 X 34.75" ADJUSTING ROD
10	NPN	1	1/2-20 X 3 1/2 ADJUSTING ROD
11	C-TT4-10182	1	BRAKE PEDAL PIVOT SHAFT
12	C-USAT5-10181	1	BRAKE PEDAL
13	C-TT4-10187-8.5	1	BELL CRANK PIVOT SHAFT 8.5 "
14	C-TT4-10187-13	1	BELL CRANK PIVOT SHAFT 13"

BRAKES

BRAKE SYSTEM HYDRAULIC



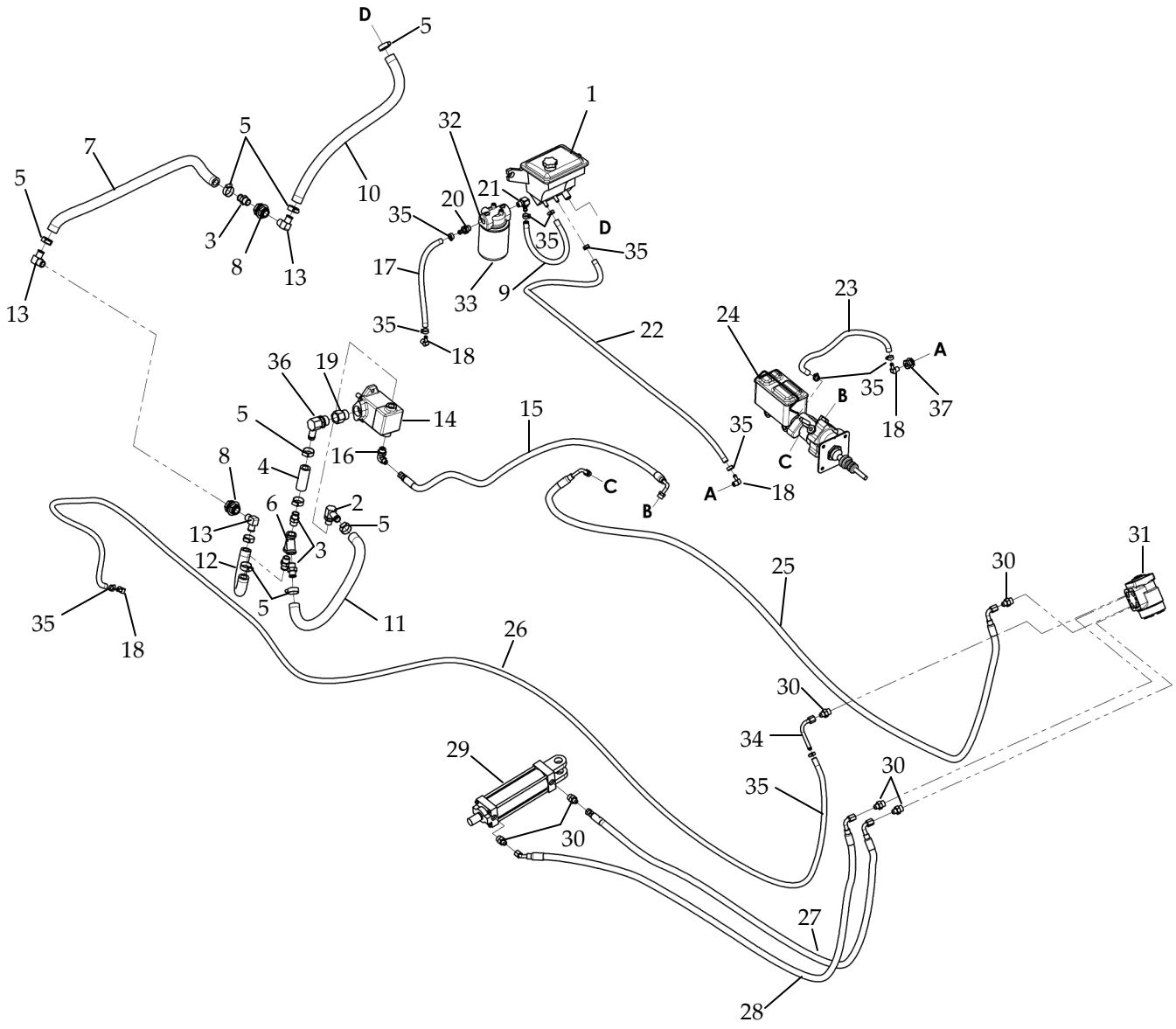
BRAKES

BRAKE SYSTEM HYDRAULIC

Item	Part Number	Qty	Description
1	A-USAT5-00175	1	BRAKE LINE FRONT RIGHT
2	A-TT4-00174	1	CROSS TEE
3	A-USAT5-00177	1	BRAKE LINE FRONT LEFT
4	NPN	6	LINE CLAMP
5	A-USAT5-00162	1	BRAKE LINE FRONT
6	A-USAT5-00171	1	BRAKE LINE FIRST REAR
7	A-TT5-00181	1	FITTING ADAPTER MASTER CYLINDER
8	A-TT4-00167	2	BRAKE LINE
9	A-TT5-00180	1	FITTING ADAPTER MASTER CYLINDER
10	A-TT4-00173	1	BRAKE LIGHT SWITCH
11	A-TT4-00163	1	BRAKE LIGHT TEE
12	NPN	1	3/16 BRAKE LINE UNION
13	A-USAT5-00164	1	BRAKE LINE SECOND HALF REAR
14	A-TT4-00165	3	BRAKE HOSE CLIP
15	A-TT4-00170	1	BRAKE LINE LEFT REAR
16	A-TT4-00166	1	BRAKE HOSE REAR
17	A-TT4-00168	1	CROSS TEE REAR
18	A-TT4-00169	1	BRAKE LINE RIGHT REAR
19	A-TT4-00176-1	2	CALIPER HOSE
20	A-TT4-00178	1	BANJO BOLT KIT

HYDRAULIC ASSIST

HYDRAULIC ASSIST SYSTEM WITH METARIS PUMP



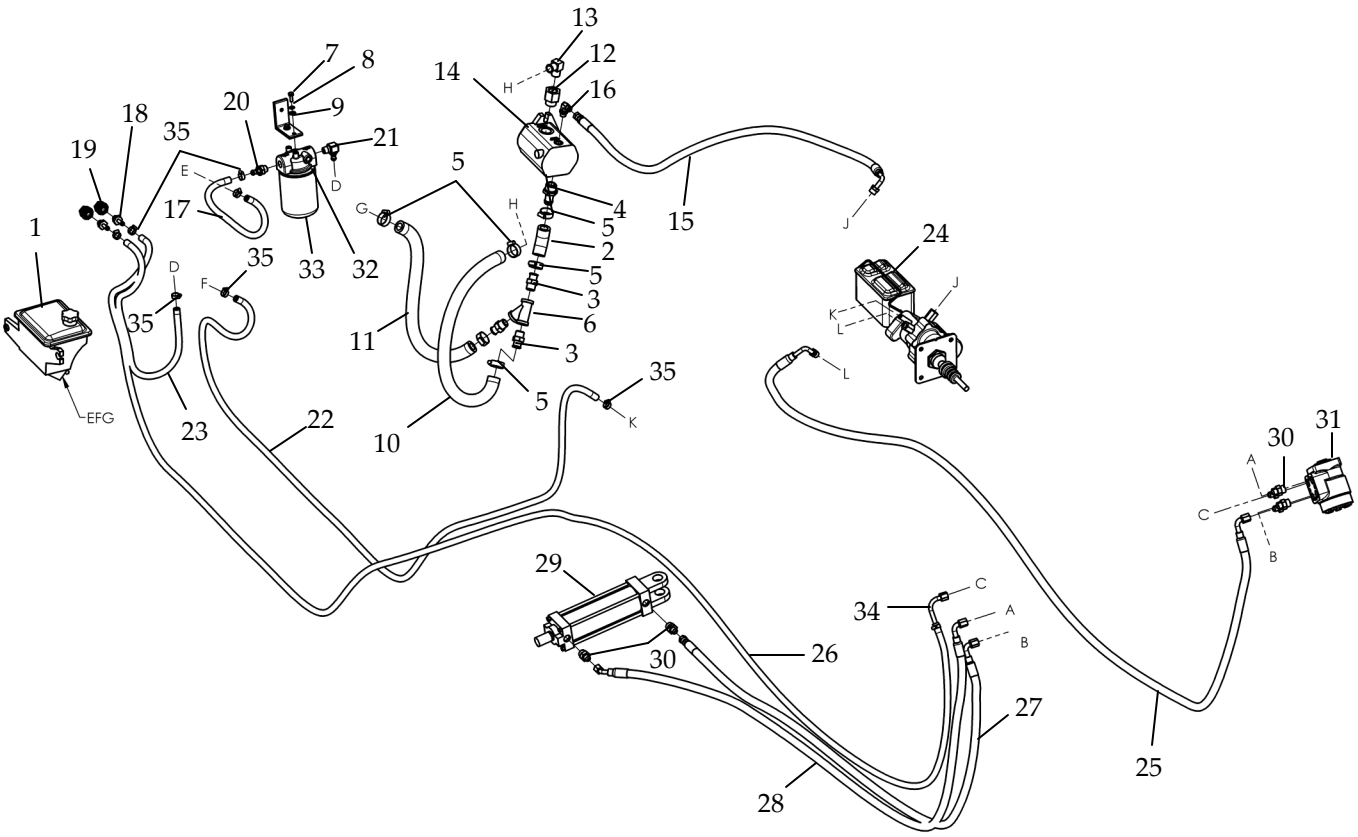
HYDRAULIC ASSIST

HYDRAULIC ASSIST SYSTEM WITH METARIS PUMP

Item	Part Number	Qty	Description
1	F81Z3A697BB	1	HYDRAULIC RESERVIOR
2	4601-12-08	1	1/2M SAE 3/4 SUCTION BARB 90 DEG
3	A-TT4-00606-1A	3	FITTING, MALE COUPLING
4	H03912	1	3/4" SUCTION HOSE 3"
5	NPN	10	#12 HOSE CLAMP
6	A-TT4-00606-1	1	Y FITTING, BLACK IRON
7	H03912	1	3/4" SUCTION HOSE 39"
8	PCH12WTX-WLN-S	2	BULKHEAD FITTING 3/4 W/LCKNT
9	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 12"
10	H03912	1	3/4" SUCTION HOSE 26"
11	H03912	1	3/4" SUCTION HOSE 17"
12	H03912	1	3/4" SUCTION HOSE 17"
13	269HB-12-8	3	ELBOW 3/4 X 1/2
14	V10F1T3T11C3F20L	1	METARIS PUMP
15	06U-606-47-06UB67	1	H42506 HOSE
16	C5515X6X8	1	1/2 M SAE JIC 37 FITTING
17	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 24"
18	05706B-104	5	FITTING, STRAIGHT 3/8 X 1/4
19	7033X14X12	1	7/8 M SAE 3/4 F SAE FITTING
20	4312-06-08	1	STRAIGHT BARB 1/2"
21	4390-06-08	1	90 DEG BARB 1/2"
22	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 68"
23	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 22"
24	A-TT4-00161-1	1	MASTER CYLINDER WITH BOOSTER
25	06U-B66-101-06U-666	1	H42506 HOSE
26	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 165"
27	06U-606-66-06U-666	1	H42506 HOSE
28	06U-686-69-06U-666	1	H42506 HOSE
29	A-USATS-00803	1	HYDRAULIC CYLINDER
30	C5315X6X8	6	STRAIGHT THREAD CONN 3/8 X 1/2
31	A-TU-00801	1	CHAR LYN PUMP
32	SAF-06-08	1	FILTER HEAD
33	SF-6520	1	HYDRAULIC FILTER ELEMENT
34	A-TT10-0001	1	90 DEG FITTING 3/8 ELBOW
35	NPN	8	#4 HOSE CLAMP
36	25TB-12-12	1	3/4 M SAE 3/4 SUCTION BARB 90 DEG FITTING
37	A-TT4-00280	7	BULKHEAD FITTING

HYDRAULIC ASSIST

HYDRAULIC ASSIST SYSTEM WITH PRINCE PUMP



HYDRAULIC ASSIST

HYDRAULIC ASSIST SYSTEM WITH PRINCE PUMP

Item	Part Number	Qty	Description
1	F81Z3A697BB	1	HYDRAULIC RESERVIOR
2	12GMV MEGA VAC	1	3/4 SUCTION HOSE 3 INCH
3	A-TT4-00606-1A	3	FITTING, MALE COUPLING
4	05TB-12-12	1	3/4 M SAE 3/4 SUCTION BARB FITTING
5	NPN	6	#12 HOSE CLAMP
6	A-TT4-00606-1	1	Y FITTING, BLACK IRON
7	NPN	2	1/4-20 X 3/4 HCS
8	NPN	2	1/4 LOCK WASHER
9	NPN	2	1/4 FLAT WASHER
10	H03912	1	3/4" SUCTION HOSE 21"-RETURN
11	H03912	1	3/4" SUCTION HOSE 24"-TANK
12	C3269X12X8	1	FEMALE PIPE ADAPTER
13	269HB-12-8	3	ELBOW 3/4 X 1/2
14	SP20PB11L145H9L	1	PRINCE PUMP
15	06U-606-47-06UB67	1	H14506 HOSE
16	C5515X6	1	3/8 M SAE M JIC 37 90 DEG FITTING
17	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 22"
18	05706B-104	4	FITTING, STRAIGHT 3/8 X 1/4
19	A-TT4-00280	2	BULKHEAD FITTING
20	4312-06-08	1	STRAIGHT BARB 1/2"
21	4390-06-08	1	90 DEG BARB 1/2"
22	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 96"
23	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 34"
24	A-TT4-00161-1	1	MASTER CYLINDER WITH BOOSTER
25	06U-B66-108-06U-666	1	H14506 HOSE
25**	06U-B66-101-06U-666	1	H14506 HOSE
26	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 200"
26**	H10106	1	3/8" HIGH PRESS 350 WK PSI HOSE 165"
27	06U-606-70-06U-666	1	H14506 HOSE
27**	06U-606-66-06U-666	1	H14506 HOSE
28	06U-686-74.5-06U-646	1	H14506 HOSE
28**	06U-686-69-06U-646	1	H14506 HOSE
29	A-USATS-00803	1	HYDRAULIC CYLINDER
30	C5315X6X8	6	STRAIGHT THREAD CONN 3/8 X 1/2
31	A-TU-00801	1	CHAR LYN PUMP
32	SAF-06-08	1	FILTER HEAD
33	SF-6520	1	HYDRAULIC FILTER ELEMENT
34	A-TT10-0001	1	90 DEG FITTING 3/8 ELBOW
35	NPN	8	#4 HOSE CLAMP

**** HOSE LENGTHS FOR TRACTORS MFG BEFORE NOVEMBER, 2013**

HYDRAULIC ASSIST

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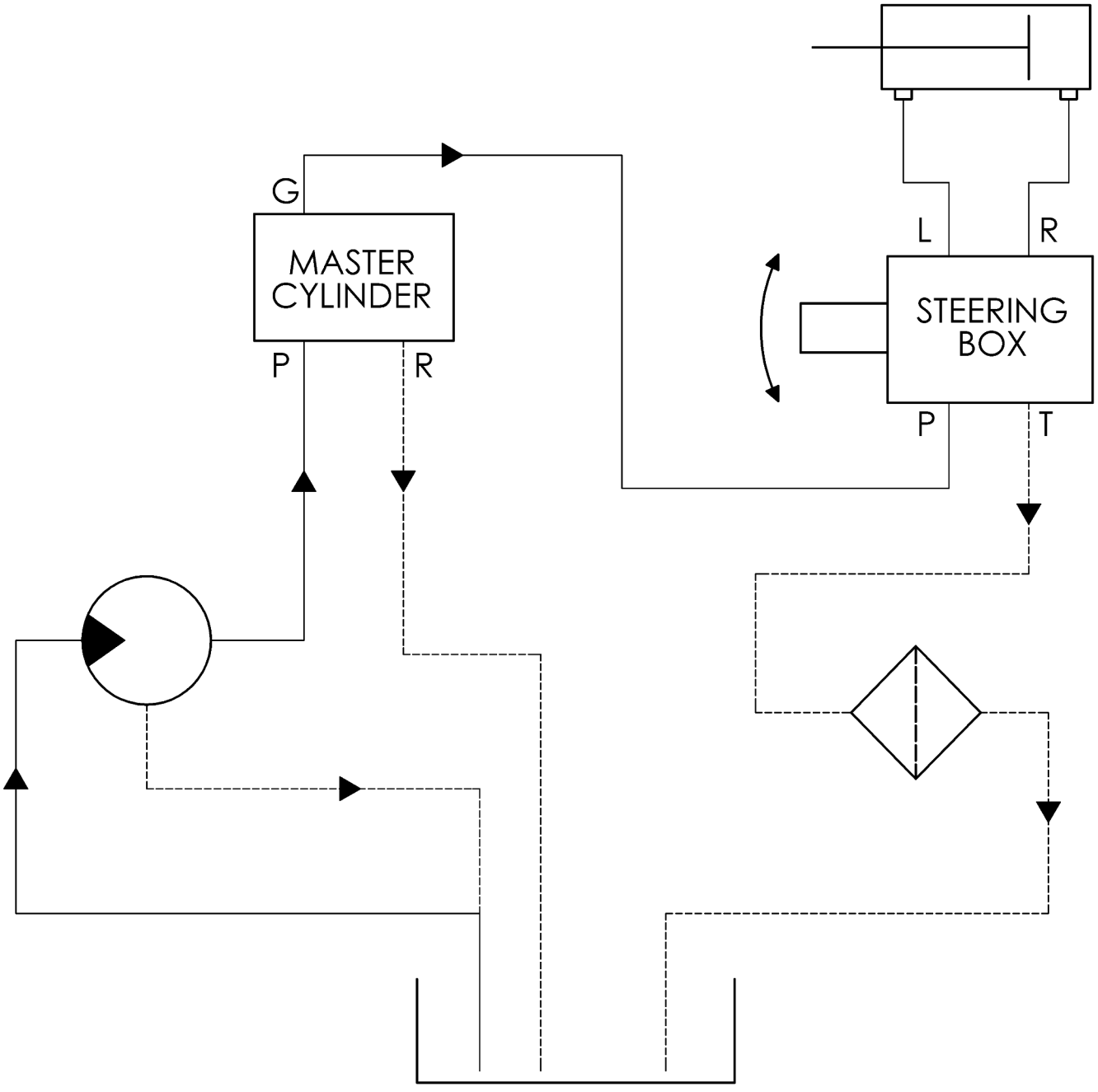
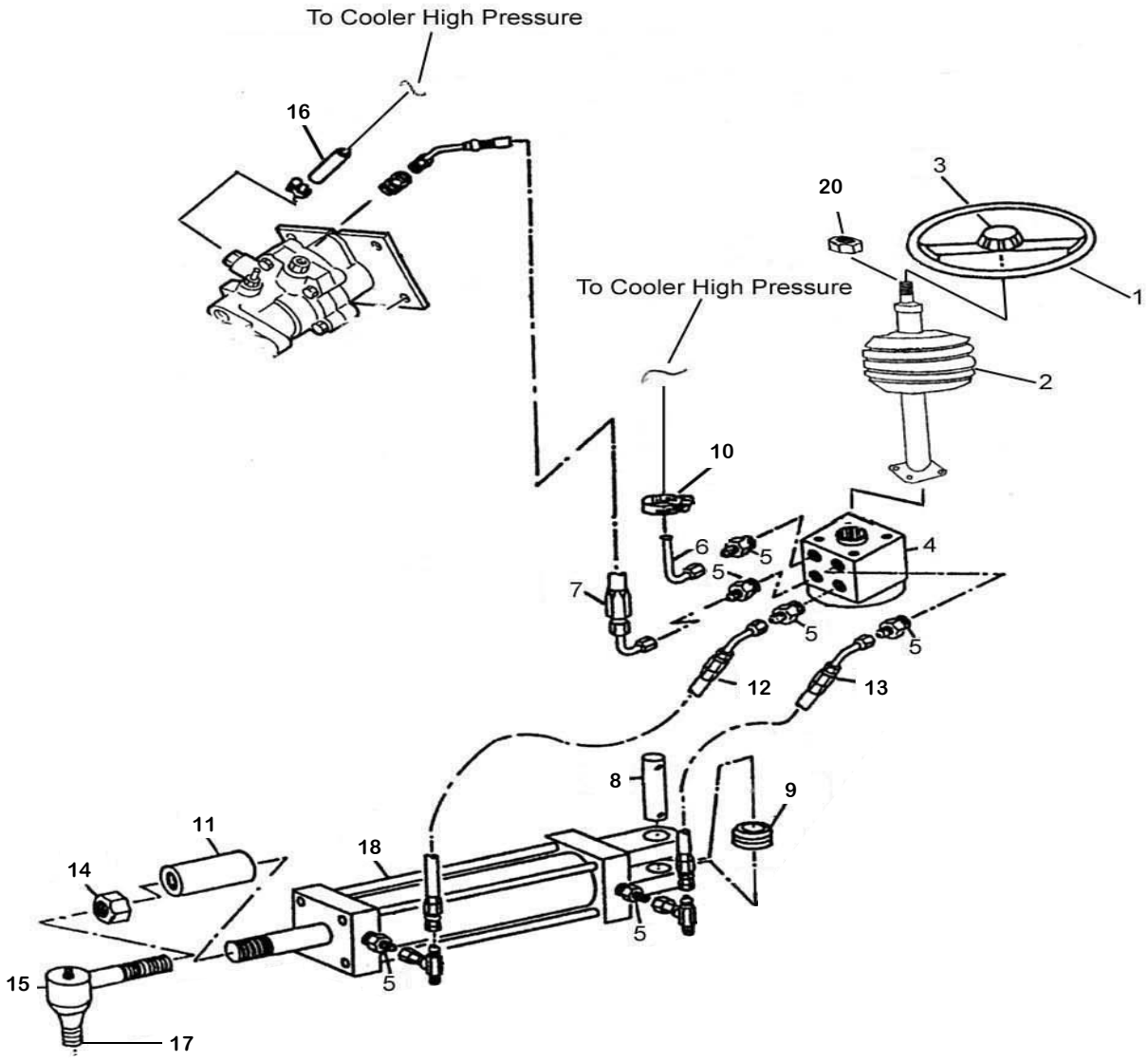
HYDRAULIC ASSIST

HYDRAULIC ASSIST SYSTEM SCHEMATIC



STEERING SYSTEM

STEERING SYSTEM BREAKDOWN



STEERING SYSTEM

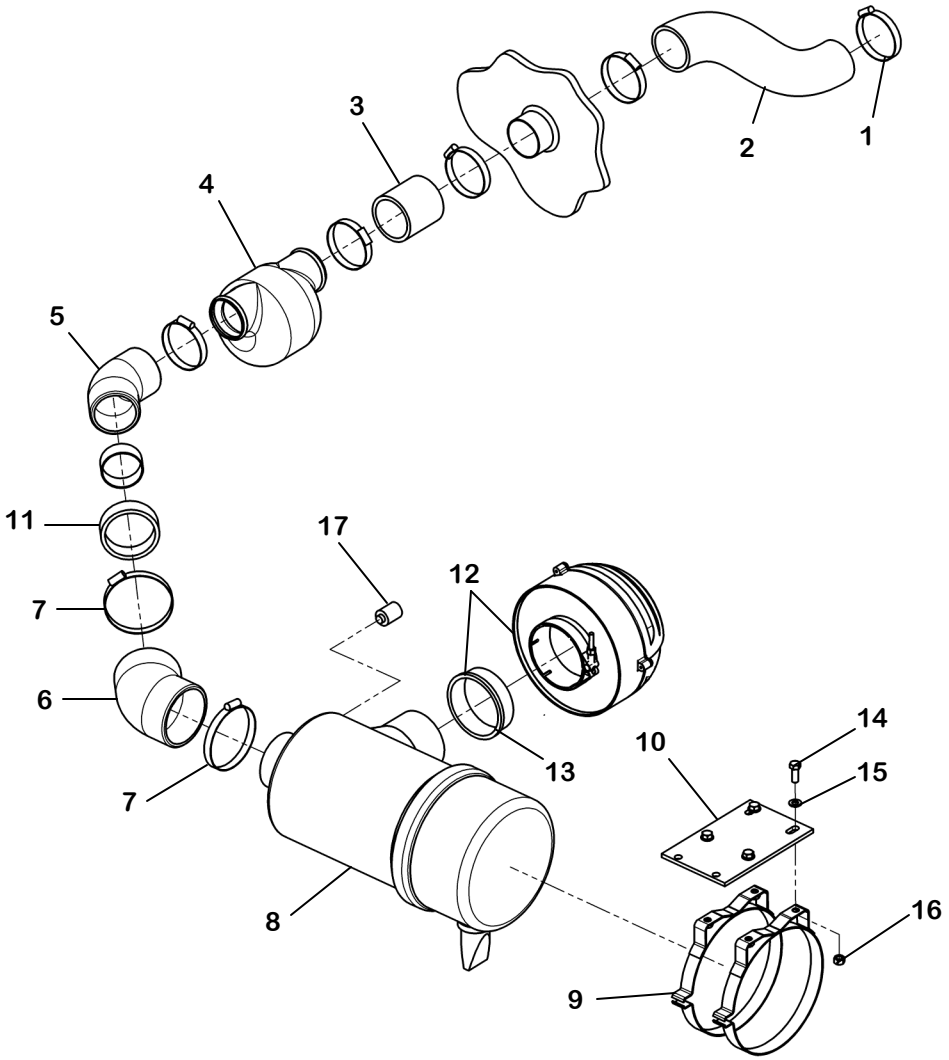
STEERING SYSTEM BREAKDOWN

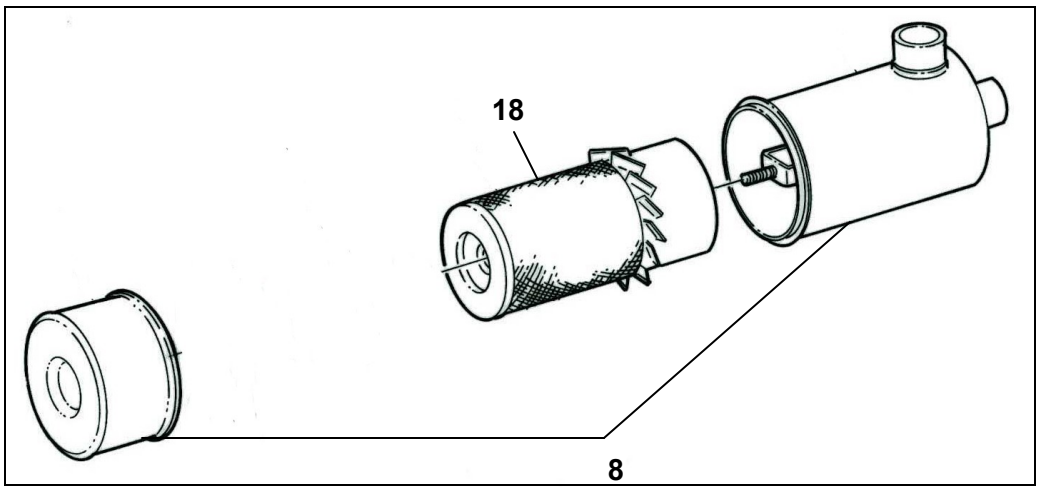
Item	Part Number	Qty	Description
1	A-TT10-00809	1	STEERING WHEEL
2	A-TT10-00807-1	1	STEERING COLUMN
3	A-TT10-00811	1	HORN BUTTON
4	A-TU-00801	1	CHARLYNN CONTROL PUMP
5	C5315X6X8	6	FITTING - ADAPTOR
6	A-TT10-0001	1	FITTING 90 DEGREE
7	06U-606-108-366	1	LINE-MASTER CYLINDER TO STEER PUMP
7**	06U-606-101-366	1	LINE-MASTER CYLINDER TO STEER PUMP
8	A-TT10-00803A	1	HYDRAULIC CYLINDER PIVOT & COTTER PIN SET
9	A-TT10-00826	1	BEARING (AFTER 7/99)
10	NPN	7	HOSE CLAMP
11	A-TT10-00817	1	DRAG LINK
12	06U-666-70-606	1	LINE -STEERING LEFT TURN
12**	06U-666-66-606	1	LINE -STEERING LEFT TURN
13	06U-666-74.5-686	1	LINE-STEERING RIGHT TURN
13**	06U-666-69-686	1	LINE-STEERING RIGHT TURN
14	A-TT10-00406	1	JAM NUT
15	A-TT10-00407	1	TIE ROD END
16	H10106	1	HIGH PRESSURE HOSE 3/8 ID 350 PSI
17	NPN	1	NUT HEX SLOTTED
18	A-USATS-00803	1	HYDRAULIC CYLINDER
19	NPN(Not Shown)	2	CLIP
20	A-TT10-00813	1	WHEEL NUT 13/16 - 20
21	06U-606-47-B67	1	LINE- ENGINE TO MASTER CYLINDER
21**	06U-606-56-B67	1	LINE- ENGINE TO MASTER CYLINDER

**** HOSE LENGTHS FOR TRACTORS MFG BEFORE NOVEMBER, 2013**

AIR CLEANER

AIR CLEANER ASSEMBLY





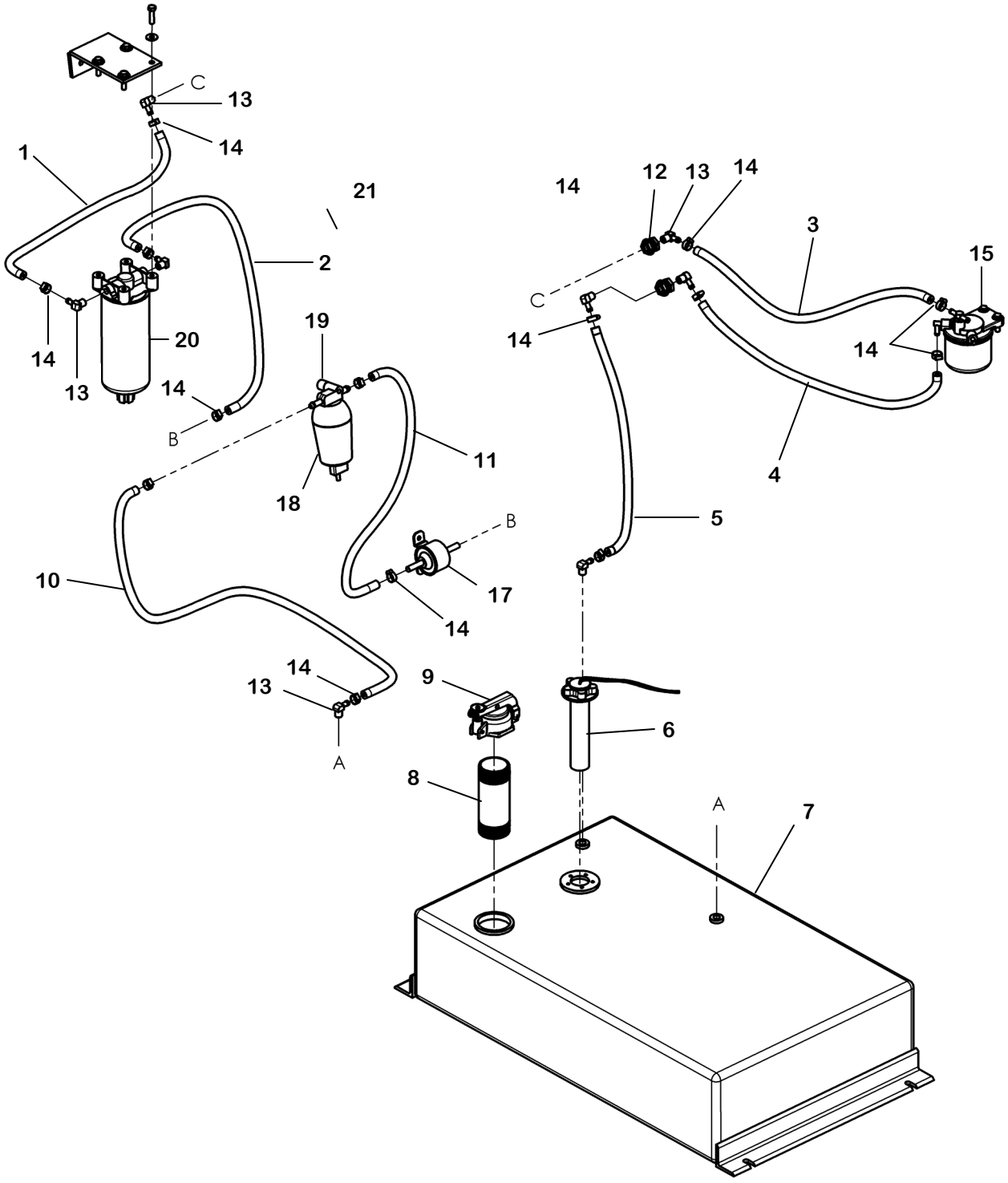
AIR CLEANER

AIR CLEANER ASSEMBLY

Item	Part Number	Qty	Description
1	NPN	5	# 40 HOSE CLAMP
2	A-TT4-00093	1	INTAKE TUBE
3	A-TT4-00332	1	COOLING HOSE SATS 2.5" ID
4	119160-12060	1	AIR INTAKE RESONATOR
5	A-TT4-00094-3	1	INTAKE TUBE 45 DEG 2.5"
6	A-TT4-00094-4	1	INTAKE TUBE 45 DEG 3.5"
7	NPN	2	# 60 HOSE CLAMP
8	A-TT4-00091-2	1	AIR CLEANER ASSEMBLY 3" (INCLUDES ITEM 18)
9	A-TT4-00092-1	2	AIR CLEANER BRACKET
10	NPN	1	AIR CLEANER ADAPTER BRACKET
11	NPN	1	HOSE SPACER ADAPTER 3" ID X 2" OD X 3"
12	AE-OPT-0201	1	PRE FILTER(OPTION INCLUDES ITEM 13)
13	40R375	1	RUBBER REDUCING INSERT(INCLUDED WITH ITEM 12)
14	NPN	6	3/8-16 X 1 BOLT
15	NPN	6	3/8 FLAT WASHER
16	NPN	6	3/8-16 LOCK WASHER
17	X002351	1	DIESEL AIR FLOW SERVICE INDICATOR
18	P601437	1	AIR CLEANER ELEMENT

FUEL SYSTEM

UNITS WITH 2″ FILL CAP

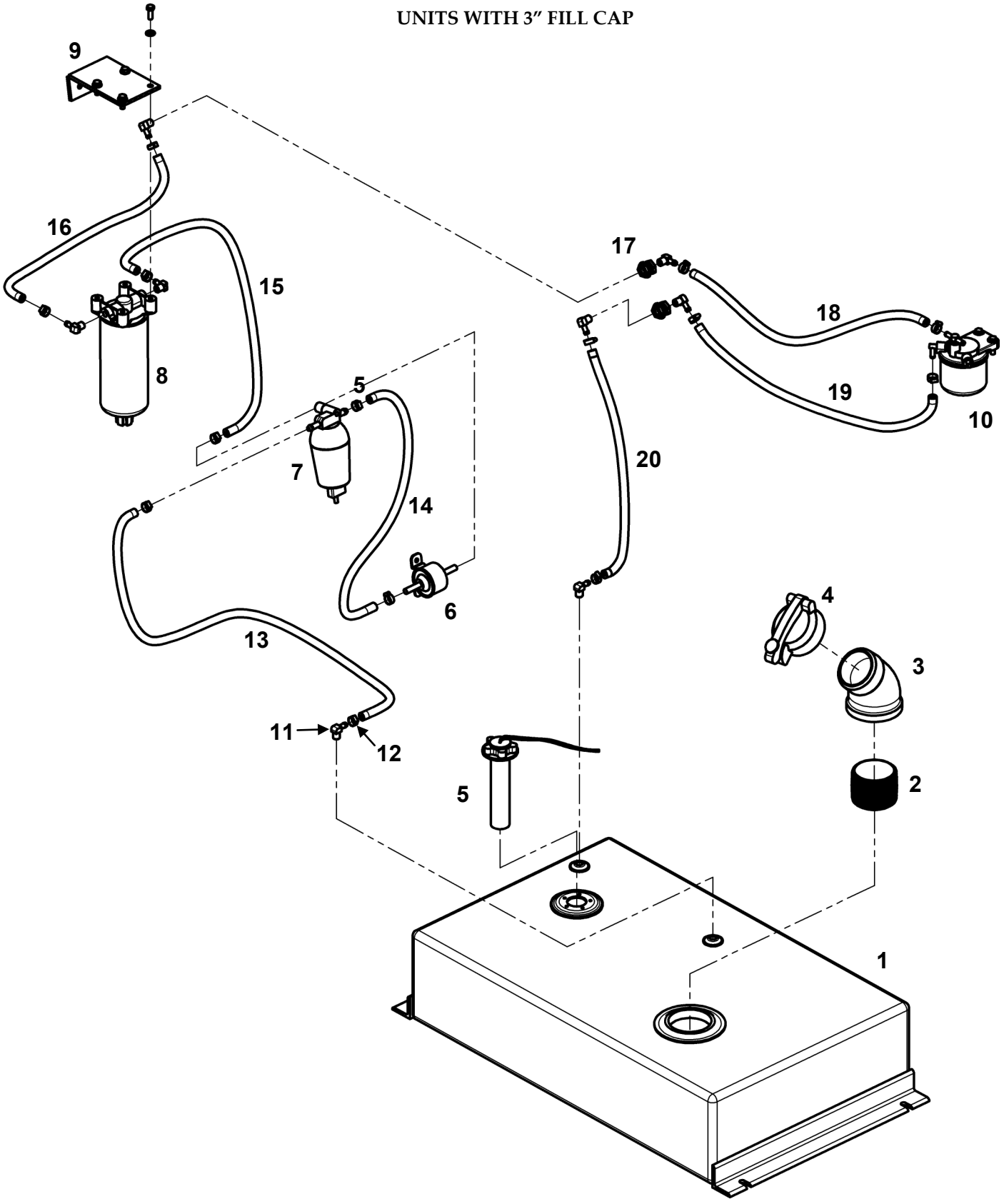


FUEL SYSTEM

Item	Part Number	Qty	Description
1	H05705	1	5/16 HOSE SAE 30R7 WK PK 24"
2	H05705	1	5/16 HOSE SAE 30R7 WK PK 36" WITH LUBRICITY FILTER 25" WITHOUT LUBRICITY FILTER
3	H05705	1	5/16 HOSE SAE 30R7 WK PK 42"
4	H05705	1	5/16 HOSE SAE 30R7 WK PK 38"
5	H05705	1	5/16 HOSE SAE 30R7 WK PK 21"
6	A-TT10-00276	1	FUEL SENDING UNIT
7	A-USAT5-00273-2	1	FUEL TANK
8	A-TT4-00272	1	NIPPLE 2 X 5.5
9	A-TT4-00271-1	1	FUEL CAP
10	H05705	1	5/16 HOSE SAE 30R7 WK PK 17"
11	H05705	1	5/16 HOSE SAE 30R7 WK PK 40"
12	A-TT4-00280	7	BULK HEAD FITTING
13	A-TT4-00274	6	90 DEGREE ELBOW FITTING
14	NPN	14	#4 HOSE CLAMP
15	129004-55610	1	BRACKET, FUEL FILTER
16	119802-55801	1	FUEL FILTER ELEMENT
17	119225-52102	1	FUEL TRANSFER PUMP
18	129242-55730	1	FUEL/WATER SEPERATOR ELEMENT
19	129424-55700	1	COMPLETE ASSY FUEL/WATER SEPERATOR
20	FS20000	1	LUBRICITY FILTER ELEMENT(OPTIONAL)
21	AE-OPT-0091	1	COMPLETE ASSY LUBRICITY FILTER(OPTIONAL)

FUEL SYSTEM

UNITS WITH 3″ FILL CAP

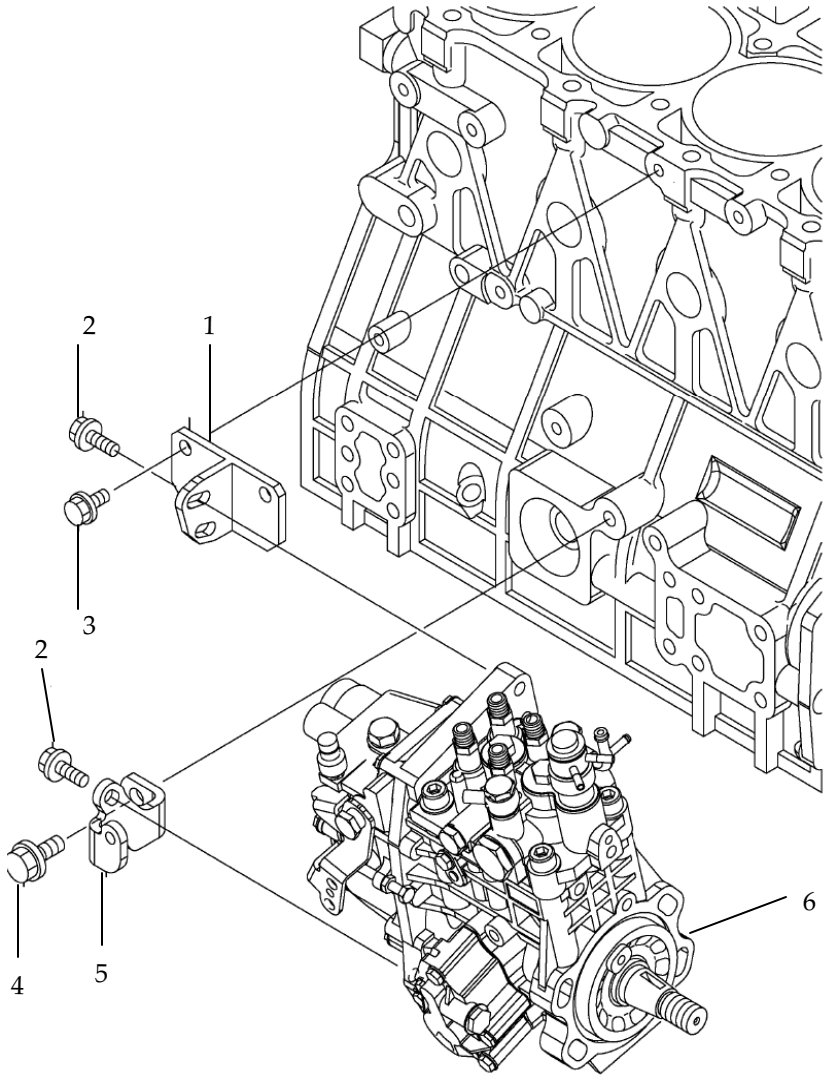


FUEL SYSTEM

Item	Part Number	Description	Qty.
1	SATS-11-001-SA	USATS FUEL TANK, REAR 3 IN NPT FILL	1
2	NVSP-11-005-CA	PIPE NIPPLE, 3 X CLOSE	1
3	NVSP-11-006-CA	STREET ELBOW, 3 NPT X 45 DEG	1
4	NVSP-11-004-CA	DIESEL FUEL FILL CAP, 3 IN NPT	1
5	A-TT10-00276	FUEL SENDING UNIT	1
6	119225-52102	FUEL TRANSFER PUMP	1
7A	129242-55730	FUEL/WATER SEPERATOR ELEMENT	N/A
7B	129424-55700	FUEL/WATER SEPERATOR COMPLETE ASSEMBLY	1
8A	FS20000	LUBRICITY FILTER ELEMENT	N/A
8B	AE-OPT-0091	LUBRICITY FILTER COMPLETE ASSEMBLY	1
9	AE-OPT-0091-A	LUBRICITY FILTER BRACKET	1
10	N/A	FUEL CONNECTION - ENGINE	N/A
11	A-TT4-00274	BRASS FITTING, 5/16 HOSE BARB X 1/4 NPT, 90 DEG	8
12	NPN	SAE HOSE CLAMP, #4	14
13	H05705	5/16 FUEL HOSE - SAE 30R7	40”
14	H05705	5/16 FUEL HOSE - SAE 30R7	17”
15	H05705	5/16 FUEL HOSE - SAE 30R7	36”
16	H05705	5/16 FUEL HOSE - SAE 30R7	24”
17	H05705	5/16 FUEL HOSE - SAE 30R7	42”
18	H05705	5/16 FUEL HOSE - SAE 30R7	38”
19	H05705	5/16 FUEL HOSE - SAE 30R7	21”

FUEL SYSTEM

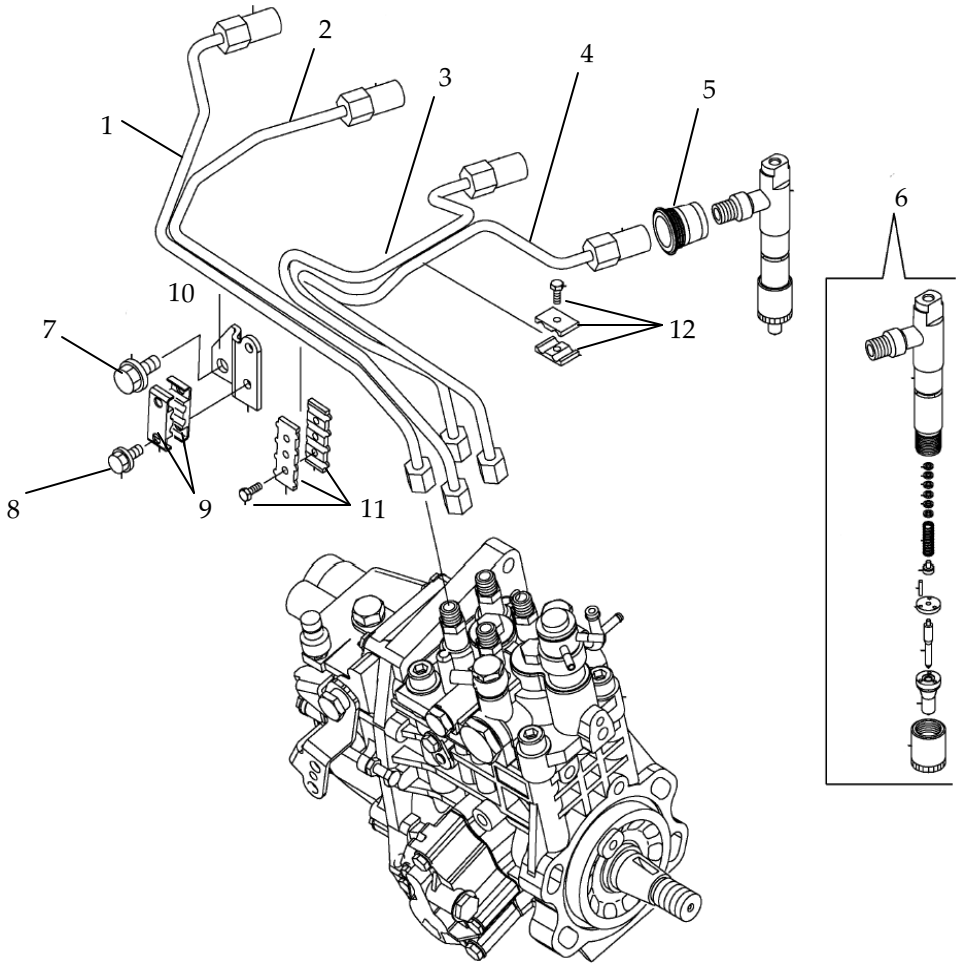
FUEL INJECTION PUMP—YANMAR DIESEL TIER II



Item	Part Number	Qty	Description
1	129907-01950	1	MOUNTING BRACKET
2	26106-080222	3	BOLT, M8 X 22 PLATED
3	26106-080162	2	BOLT, M8 X 16 PLATED
4	26106-100202	1	BOLT, M10 X 20 PLATED
5	129907-01960	1	MOUNTING BRACKET
6	729907-51320	1	FUEL INJECTION PUMP

FUEL SYSTEM

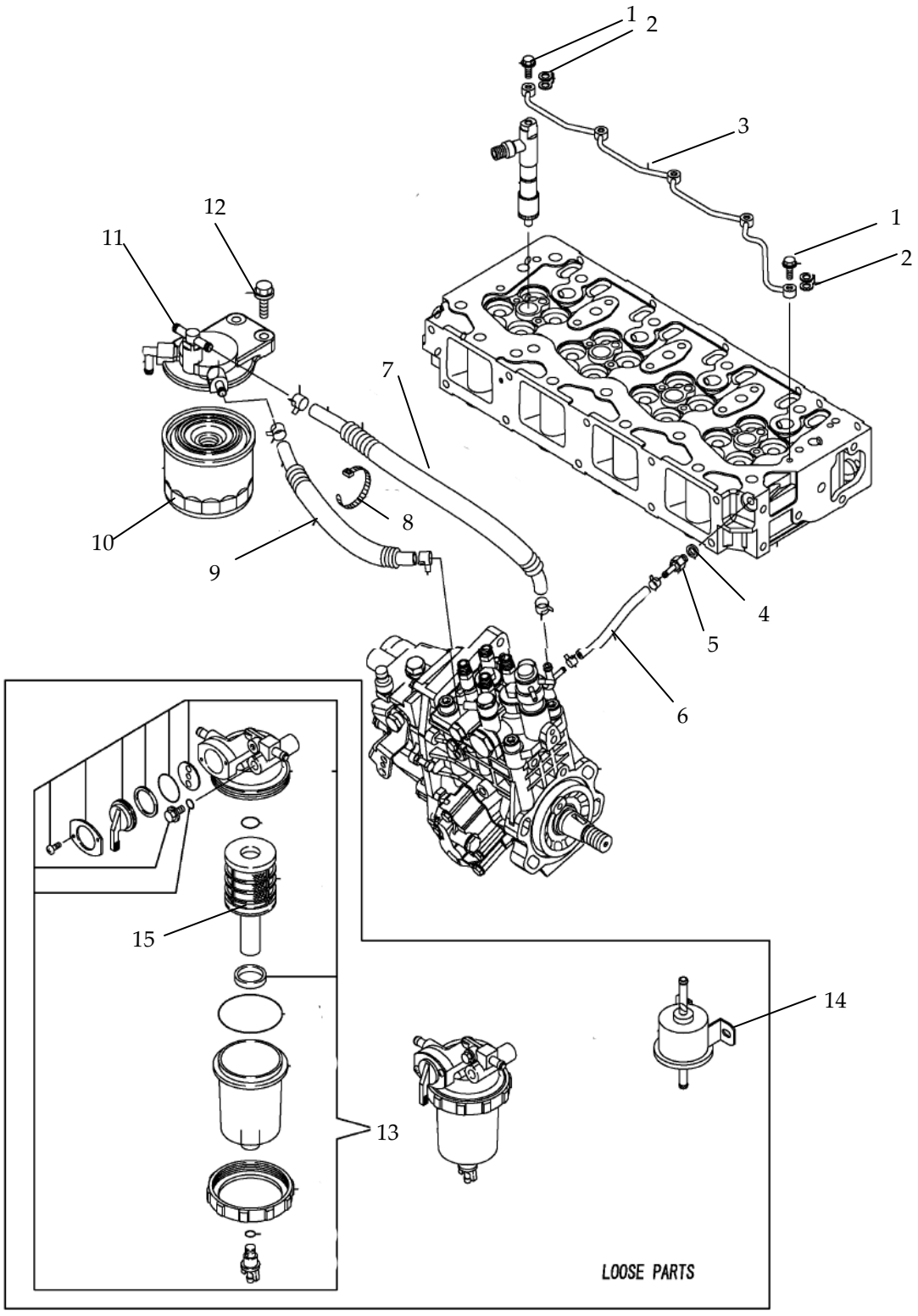
FUEL INJECTION LINES AND NOZZLE—YANMAR DIESEL TIER II



Item	Part Number	Qty	Description
1	129907-59810	1	PIPE ASSEMBLY FUEL INJECTION
2	129907-59820	1	PIPE ASSEMBLY FUEL INJECTION
3	122907-59830	1	PIPE ASSEMBLY FUEL INJECTION
4	129907-59840	1	PIPE ASSEMBLY FUEL INJECTION
5	123907-11601	4	PIPE SEAL
6	129937-53000	4	NOZZLE ASSEMBLY
7	26106-080182	1	BOLT, M8 X 18 PLATED
8	26106-060162	1	BOLT, M6 X 16 PLATED
9	122780-59100	2	RETAINER
10	129907-59710	1	BRACKET
11	129550-59120	1	RETAINER
12	119305-59120	1	RETAINER

FUEL SYSTEM

ENGINE FUEL LINE —YANMAR DIESEL TIER II



FUEL SYSTEM

ENGINE FUEL LINE—YANMAR DIESEL TIER II

Item	Part Number	Qty	Description
1	123907-59540	5	JOINT BOLT, M6
2	123907-59550	5	PACKING, FUEL RETURN
3	129907-59140	1	PIPE ASSEMBLY F.O. RETURN
4	22190-080002	1	SEAL WASHER
5	123907-59560	1	HOSE JOINT
6	129486-59551	1	PIPE ASSY FUEL RETURN WITH CLAMPS
7	129457-59010	1	PIPE ASSY FUEL WITH CLAMPS
8	121750-59890	1	CLAMP #40
9	129981-59010	1	PIPE ASSY FUEL WITH CLAMPS
10	119802-55801	1	FUEL FILTER ELEMENT
11	129004-55610	1	BRACKET FUEL FILTER
12	26106-080302	2	BOLT, M8 X 30 PLATED
13	129242-55700	1	FUEL WATER SEPERATOR COMPLETE ASSY
14	119225-52102	1	PUMP ASSEMBLY, FUEL FEE
15	129242-55730	1	FUEL WATER SEPERATOR ELEMENT

Note: The fuel system needs to be primed under certain conditions.

*Before starting the engine for the first time

*After running out of fuel and fuel has been added to the fuel tank

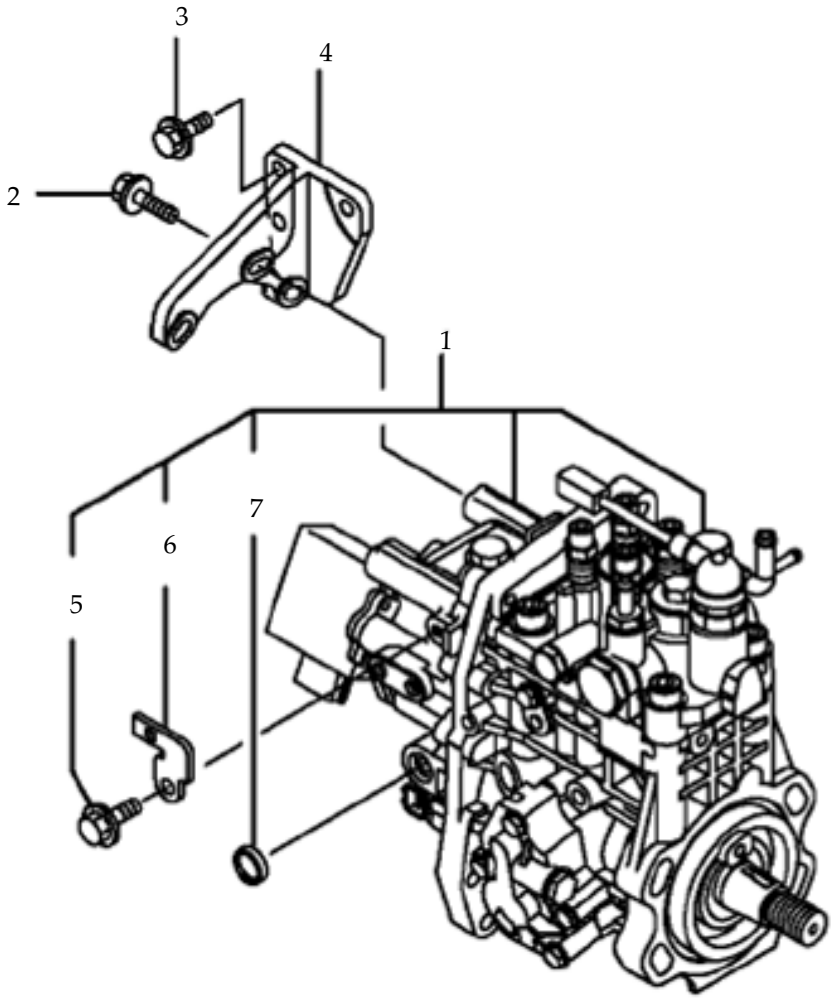
*After fuel system maintenance such as changing the fuel filter and draining the fuel/water separator, or replacing a fuel system component

To prime the fuel system:

1. Turn the key to the ON position for 10 to 15 seconds. This will allow the electric fuel pump to prime the fuel system.
2. NEVER use the starter motor to crank the engine in order to prime the fuel system. This may cause the starter motor to overheat and damage the coils, pinion and / or ring gear.

FUEL SYSTEM

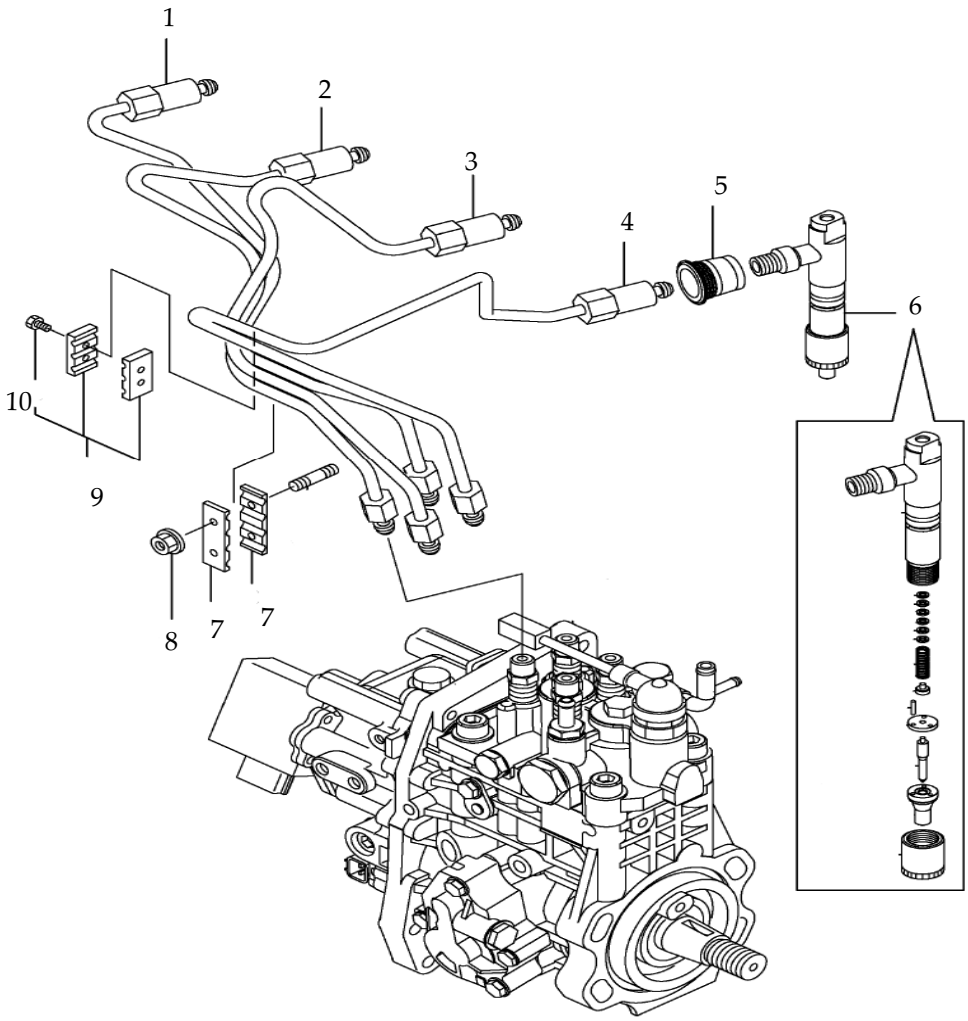
FUEL INJECTION PUMP—YANMAR TIER III DIESEL



Item	Part Number	Qty	Description
1	729939-51390	1	FUEL INJECTION PUMP
2	26106-080302	3	BOLT, M8 X 30 PLATED
3	26106-080202	3	BOLT, M8 X 20 PLATED
4	129927-51250	1	RETAINER
5	26106-060122	1	BOLT, M6 X 12 PLATED
6	129927-58170	1	LEVER
7	27241-160000	1	PLUG 16

FUEL SYSTEM

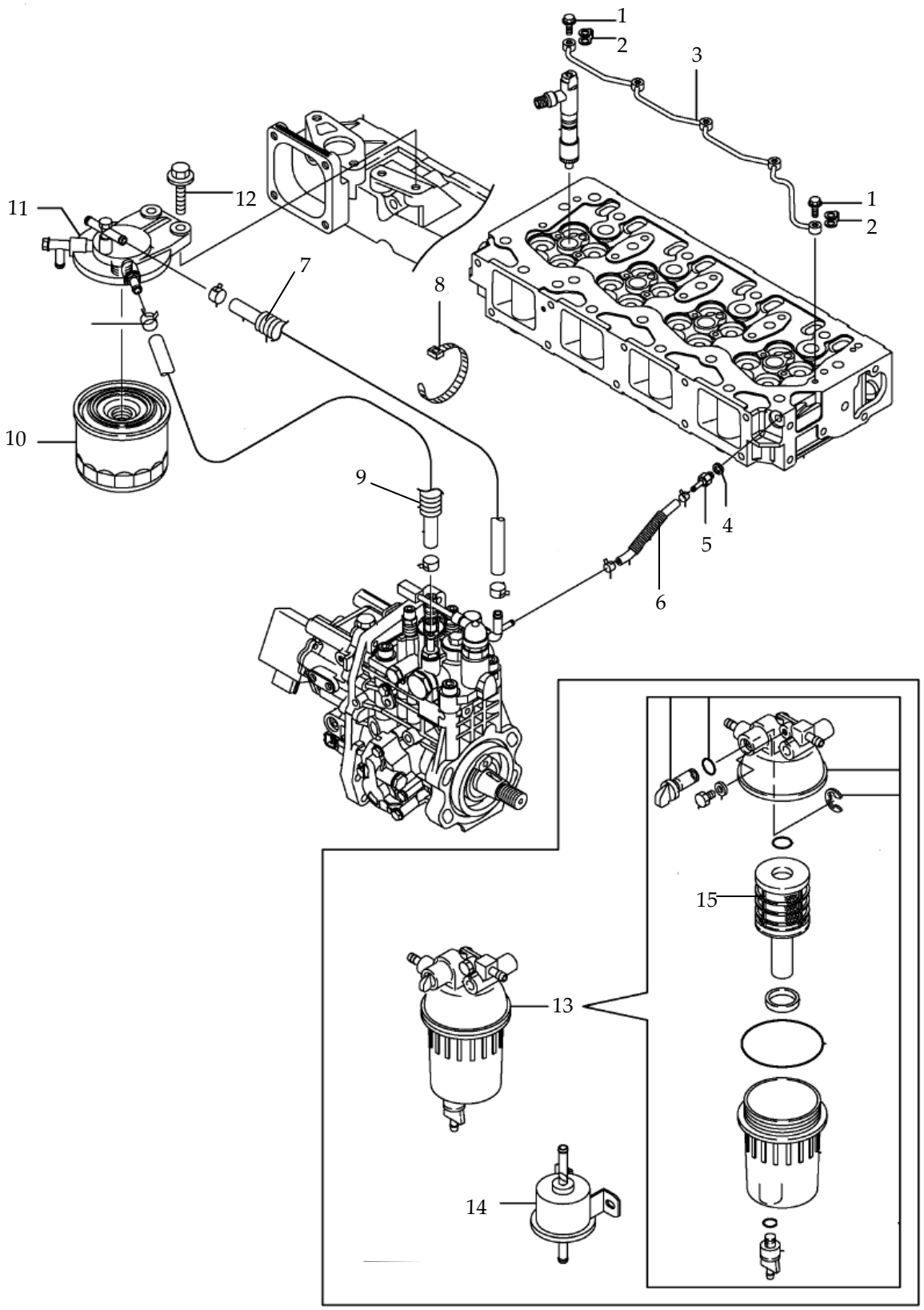
FUEL INJECTION LINES AND NOZZLE—YANMAR TIER III DIESEL



Item	Part Number	Qty	Description
1	129927-59810	1	PIPE ASSEMBLY FUEL INJECTION
2	129927-59820	1	PIPE ASSEMBLY FUEL INJECTION
3	122927-59830	1	PIPE ASSEMBLY FUEL INJECTION
4	129927-59840	1	PIPE ASSEMBLY FUEL INJECTION
5	123907-11601	4	PIPE SEAL
6	729927-53100	4	FUEL INJECTOR
7	123472-59120	2	BRACKET
8	26366-060002	2	NUT M6
9	129150-59120	1	RETAINER
10	129150-59131	2	BOLT, M4 X 14 HEX SCKT

FUEL SYSTEM

ENGINE FUEL LINE —YANMAR TIER III DIESEL



FUEL SYSTEM

ENGINE FUEL LINE—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	123907-59540	5	JOINT BOLT, M6
2	123907-59550	5	PACKING, FUEL RETURN
3	129907-59140	1	PIPE ASSEMBLY F.O. RETURN
4	22190-080002	1	SEAL WASHER
5	123907-59560	1	HOSE JOINT
6	129486-59550	1	PIPE ASSY FUEL RETURN WITH CLAMPS
7	129457-59010	1	PIPE ASSY FUEL WITH CLAMPS
8	121750-59890	1	CLAMP #40
9	129961-59310	1	PIPE ASSY FUEL WITH CLAMPS
10	119802-55801	1	FUEL FILTER ELEMENT
11	129004-55612	1	BRACKET FUEL FILTER
12	26106-080302	2	BOLT, M8 X 30 PLATED
13	129242-55700	1	FUEL WATER SEPERATOR COMPLETE ASSY
14	119225-52102	1	PUMP ASSEMBLY, FUEL FEED
15	129242-55730	1	FUEL WATER SEPERATOR ELEMENT

Note: The fuel system needs to be primed under certain conditions.

*Before starting the engine for the first time

*After running out of fuel and fuel has been added to the fuel tank

*After fuel system maintenance such as changing the fuel filter and draining the fuel/water separator, or replacing a fuel system component

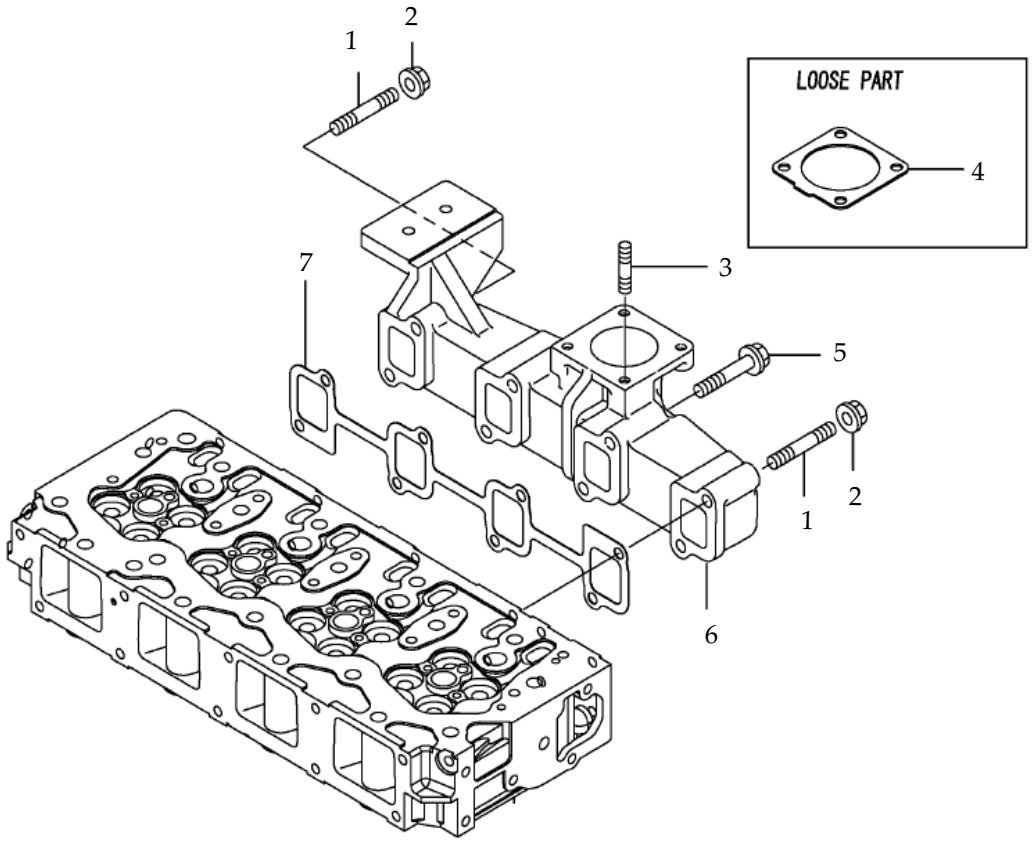
To prime the fuel system:

1.Turn the key to the ON position for 10 to 15 seconds. This will allow the electric fuel pump to prime the fuel system.

2.NEVER use the starter motor to crank the engine in order to prime the fuel system. This may cause the starter motor to overheat and damage the coils, pinion and / or ring gear.

EXHAUST & INTAKE SYSTEM

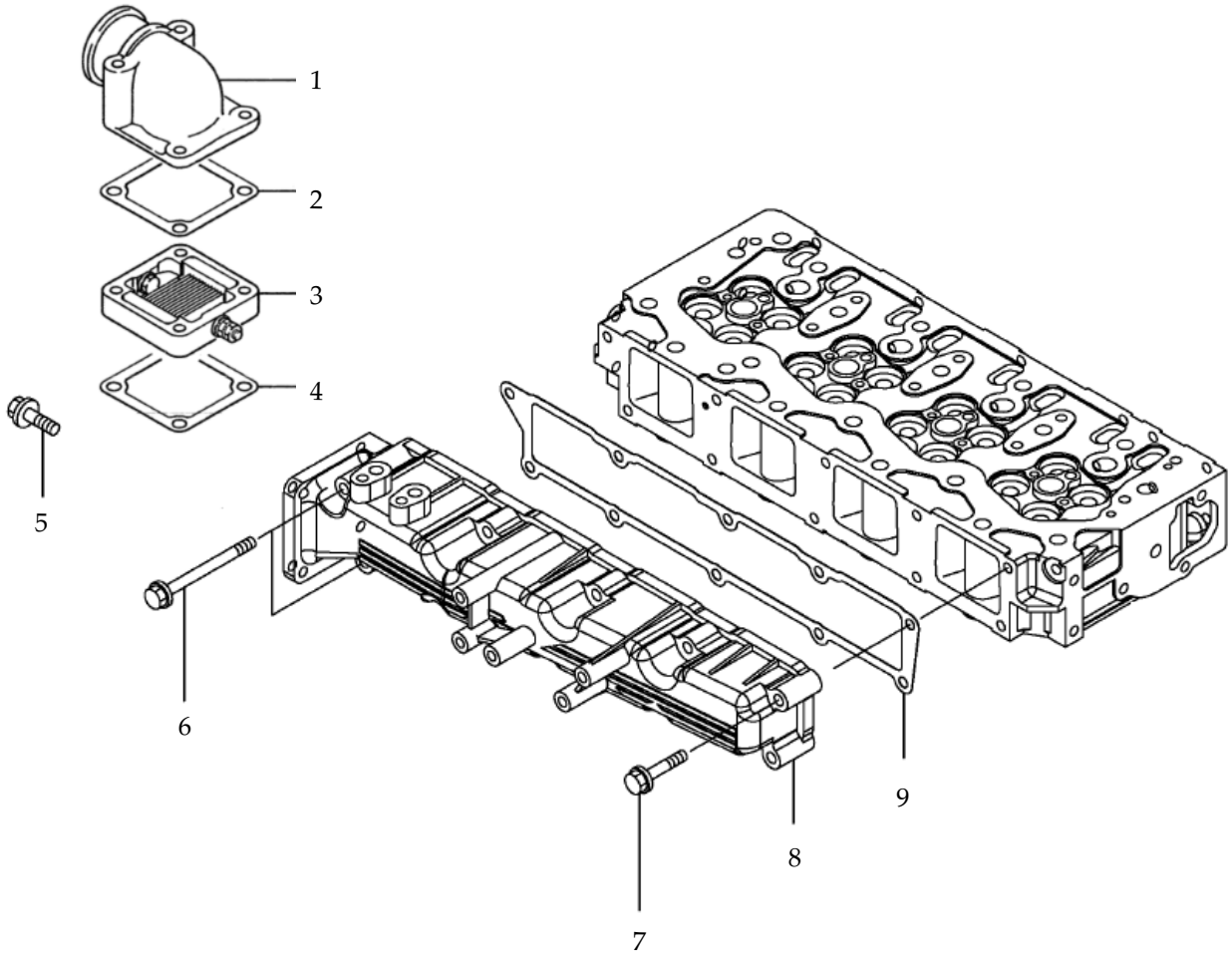
EXHAUST MANIFOLD—YANMAR DIESEL TIER II



Item	Part Number	Qty	Description
1	123900-13610	2	STUD, M8 X 80
2	26306-080002	2	NUT
3	119131-18320	4	BOLT, M8 X 22
4	129930-13200	1	GASKET, SILENCER
5	123900-13630	6	BOLT, M8 X 80
6	129907-13200	1	EXHAUST MANIFOLD
7	129900-13251	1	GASKET, EXHAUST MANIFOLD

EXHAUST & INTAKE SYSTEM

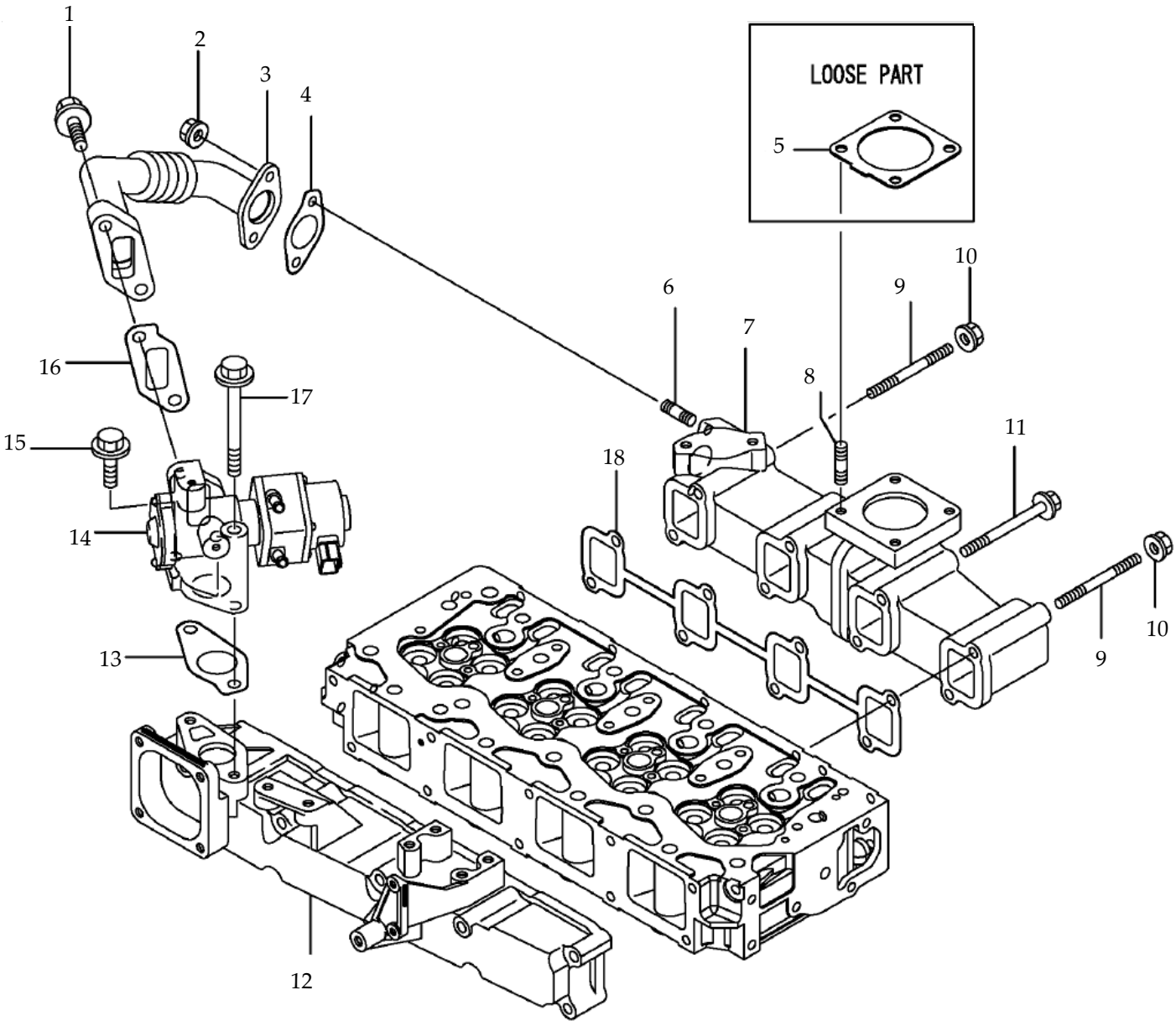
INTAKE MANIFOLD—YANMAR DIESEL TIER II



Item	Part Number	Qty	Description
1	119129-77520	1	INTAKE ELBOW
2	119129-77020	1	GASKET, AIR HEATER
3	119005-77050	1	AIR HEATER
4	121850-77021	1	GASKET, AIR HEATER
5	26106-080352	4	BOLT, M8 X 35 PLATED
6	26106-080802	2	BOLT, M8 X 80 PLATED
7	26106-080452	8	BOLT, M8 X 45 PLATED
8	129944-12110	1	INTAKE MANIFOLD
9	129907-12110	1	GASKET, INTAKE MANIFOLD

EXHAUST & INTAKE SYSTEM

EXHAUST MANIFOLD—YANMAR TIER III DIESEL



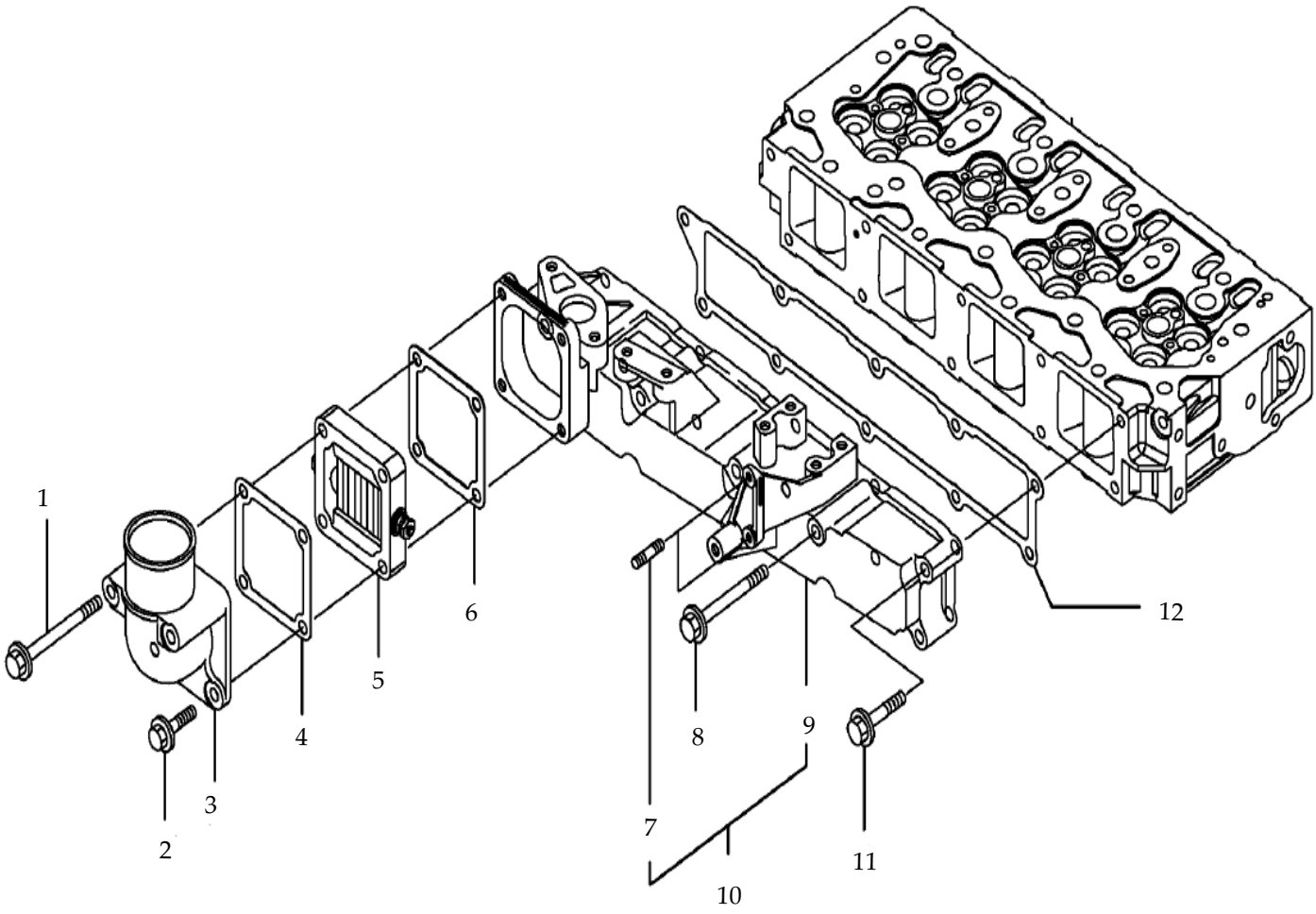
EXHAUST & INTAKE SYSTEM

EXHAUST MANIFOLD—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	26106-100302	2	BOLT, M10 X 30 PLATED
2	26306-080002	2	NUT
3	129927-13800	1	PIPE, EGR
4	129927-13810	1	GASKET, EGR
5	129930-13201	1	GASKET, SILENCER
6	129418-18320	2	STUD BOLT M8 X 20
7	129927-13100	1	EXHAUST MANIFOLD
8	119131-18320	4	BOLT, M8 X 22
9	129263-13210	2	STUD
10	26306-080002	2	NUT
11	119802-13680	6	BOLT, M8 X 90
12	129927-12100	1	INTAKE MANIFOLD
13	129927-13920	1	GASKET, EGR V-OUT
14	129927-13900	1	EGR VALVE
15	26106-100302	1	BOLT, M10 X 30 PLATED
16	129927-13910	1	GASKET, EGR V-IN
17	26106-100952	1	BOLT, M10 X 95 PLATED
18	129900-13251	1	GASKET

EXHAUST & INTAKE SYSTEM

INTAKE MANIFOLD—YANMAR TIER III DIESEL



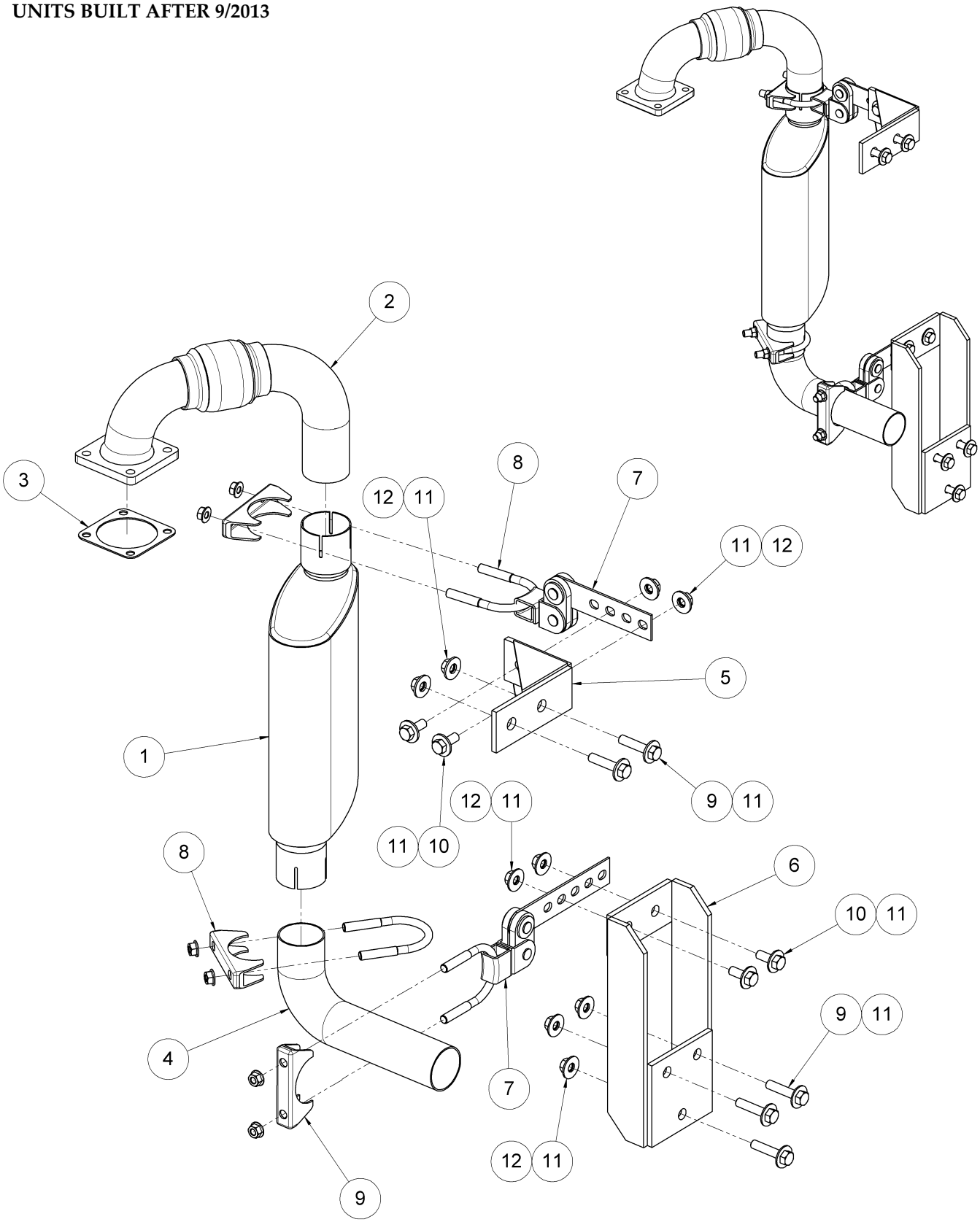
EXHAUST & INTAKE SYSTEM

INTAKE MANIFOLD—YANMAR TIER III DIESEL

Item	Part Number	Qty	Description
1	26106-080902	2	BOLT, M8 X 90 PLATED
2	26106-080402	2	BOLT, M8 X 40 PLATED
3	119129-77520	1	BEND
4	119129-77020	1	GASKET
5	119005-77051	1	AIR HEATER
6	121850-77021	1	GASKET, AIR HEATER
7	26216-060202	2	STUD, M6 X 20 PLATED
8	26106-080802	4	BOLT, M8 X 80 PLATED
9	129927-12100	2	INTAKE MANIFOLD
10	129927-12150	1	MANIFOLD CMP, INTAKE
11	26106-080452	6	BOLT, M8 X 45 PLATED
12	129907-12110	1	GASKET, INTAKE MANIFOLD

EXHAUST SYSTEM

UNITS BUILT AFTER 9/2013



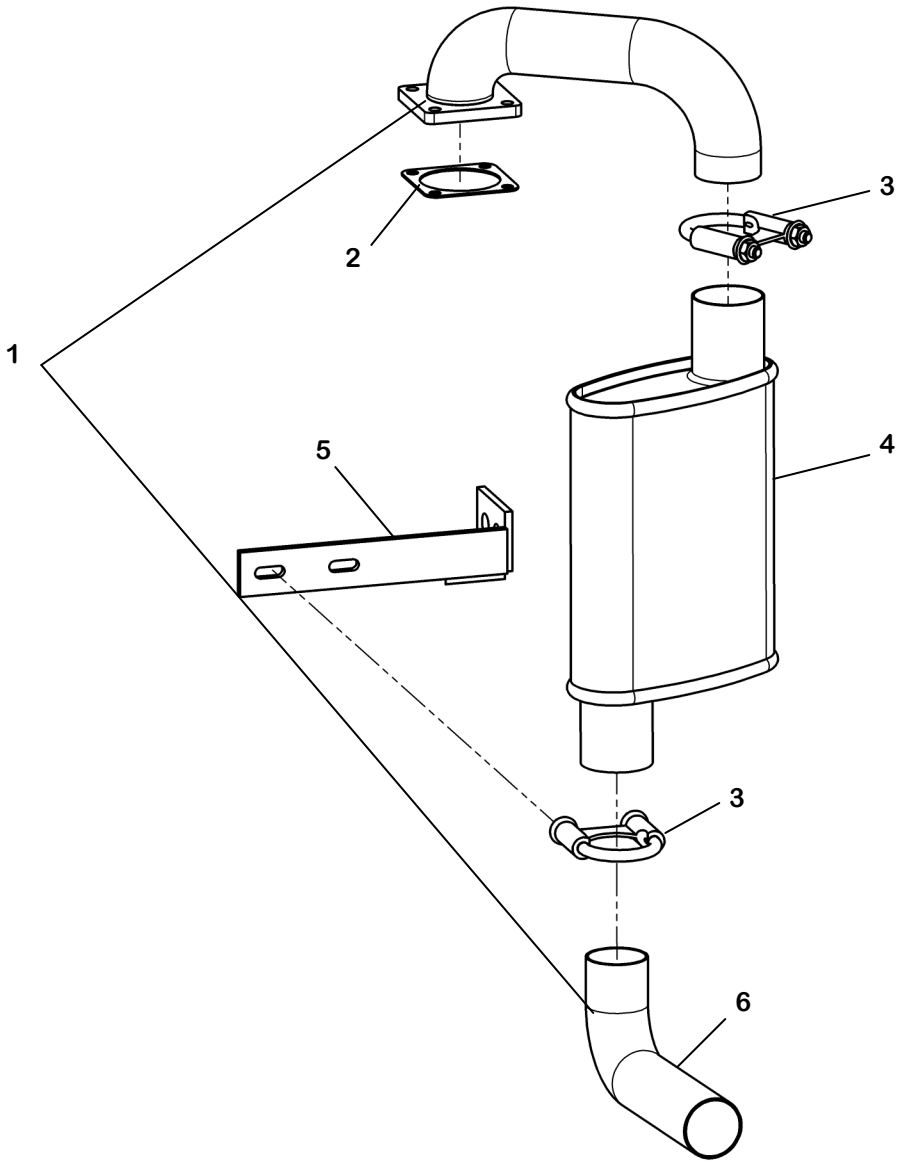
EXHAUST SYSTEM

Item	Part Number	Qty.	Description
1	A-TT4-00258-2	1	MUFFLER
2	TT08-57-001-KA	1	2 PIECE EXHAUST PIPE ASSEMBLY (DISCARD LOWER)
3	129930-13200	1	EXHAUST GASKET
4	A-TT4D-00254	1	TAIL PIPE
5	SATS-02-006-SA	1	EXHAUST BRACKET TOP
6	SATS-02-007-SA	1	EXHAUST BRACKET BOTTOM
7	A-TT4-00260	2	EXHAUST HANGER
8	A-TT4-00254	3	EXHAUST CLAMP
9	NPN	4	HCS, 3/8-16 UNC X 1.75
10	NPN	4	HCS, 3/8-16 UNC X 1.0
11	NPN	16	FLAT WASHER, 3/8
12	NPN	8	LOCK NUT, 3/8-16 UNC

EXHAUST SYSTEM

EXHAUST SYSTEM– DIESEL

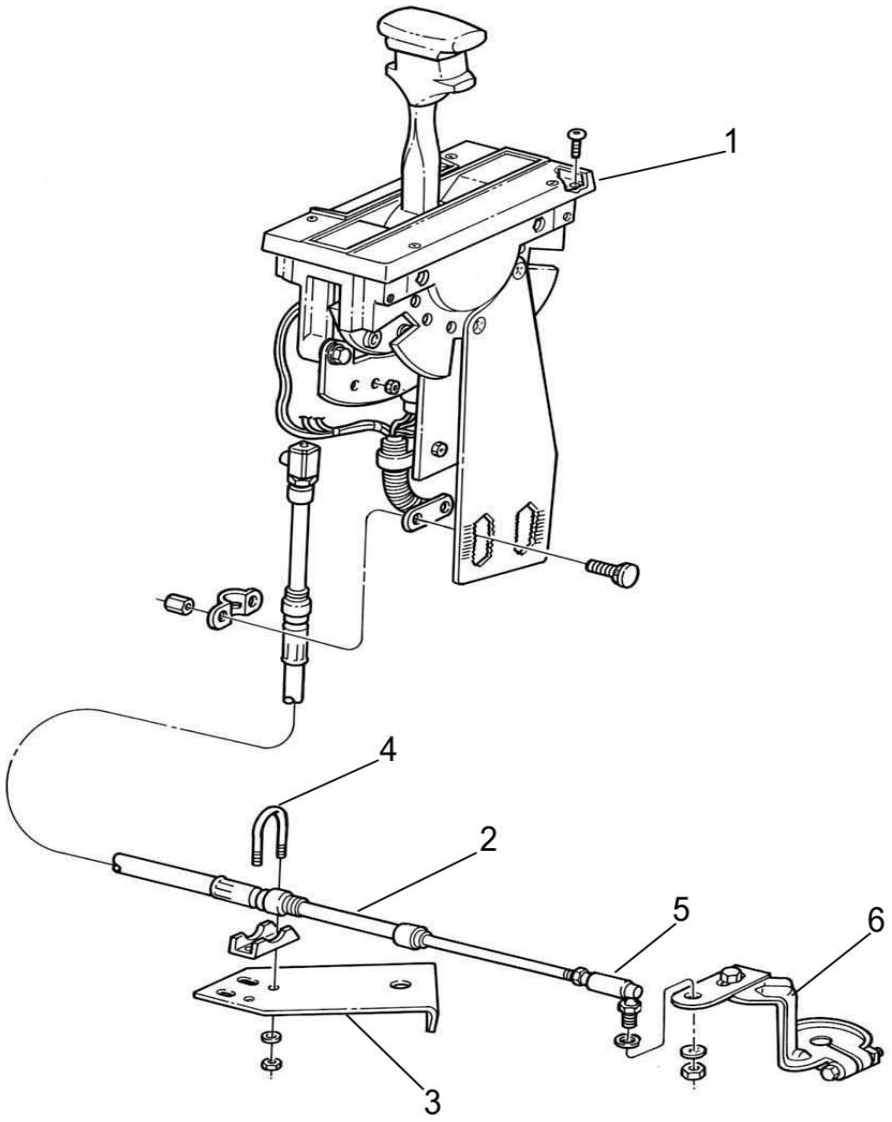
UNITS BUILT PRIOR TO 9/2013



Item	Part Number	Qty	Description
1	A-TT4D-00253-3	1	2 PC EXHAUST/TAIL PIPE ASSEMBLY
2	129930-13200	1	EXHAUST GASKET
3	A-TT4-00254	2	2″ MUFFLER CLAMPS
4	A-TT4-00258-2	1	MUFFLER
5	A-TT4-00255	1	EXHAUST BRACKET
6	A-TT4D-00254	1	TAILPIPE

OPERATOR COMPARTMENT

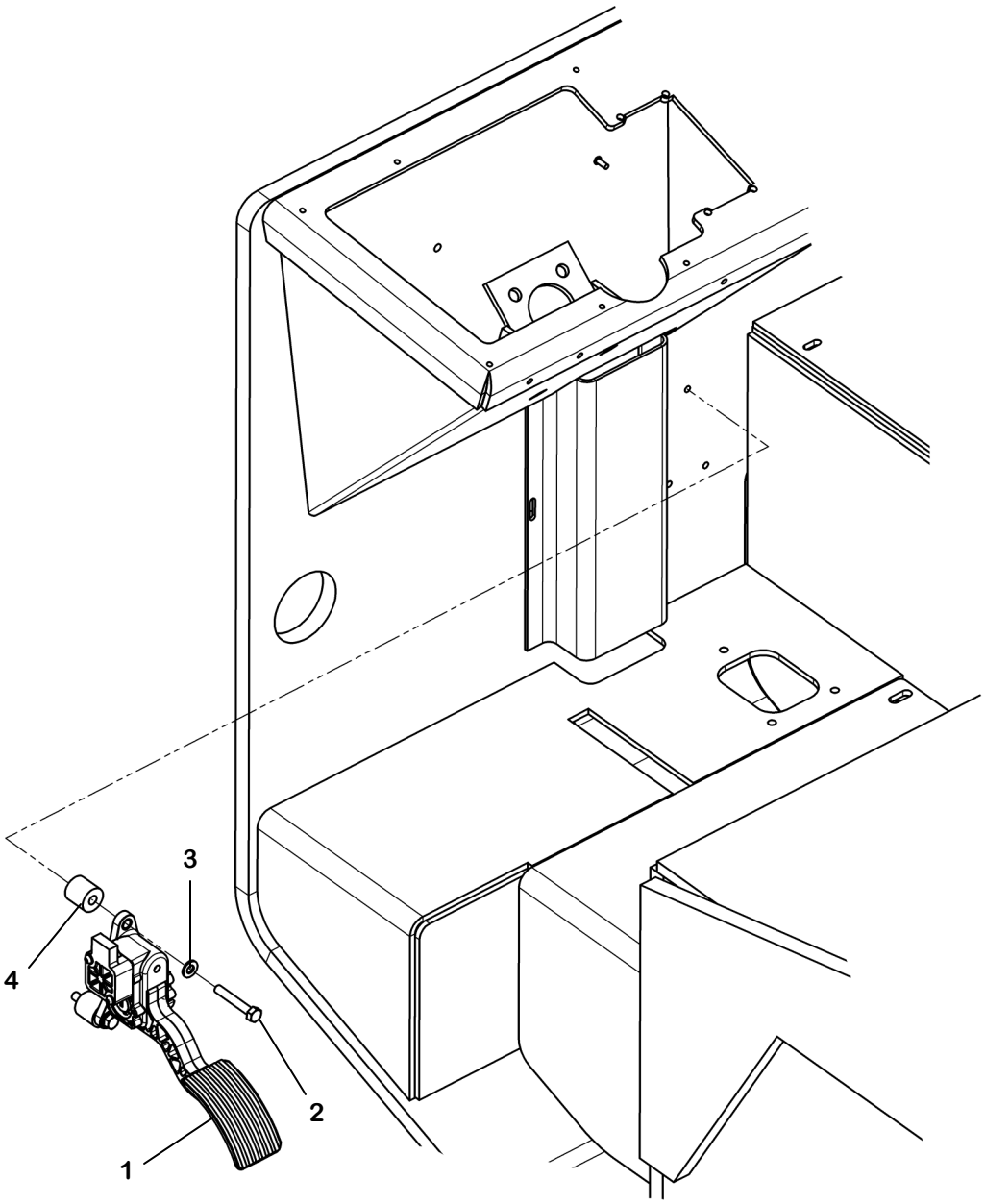
TRANSMISSION CONTROL



Item	Part Number	Qty	Description
1	A-TT4-00245	1	TRANSMISSION SHIFT CONTROL
2	A-USAT5-00246	1	TRANSMISSION SHIFT CABLE 120'
3	A-TT4-00248	1	TRANSMISSION CABLE BRACKET ASSEMBLY
4	A-TT4-00247	1	U-BOLT KIT
5	A-TT4-00249	1	BALL JOINT KIT
6	A-TT4-00419	1	TRANSMISSION LEVER
7	302008	1	INDICATOR STRIP REPAIR KIT
8	302348	1	HANDLE REPAIR KIT

OPERATOR COMPARTMENT

ACCELERATOR PEDAL ASSEMBLY —YANMAR TIER III DIESEL

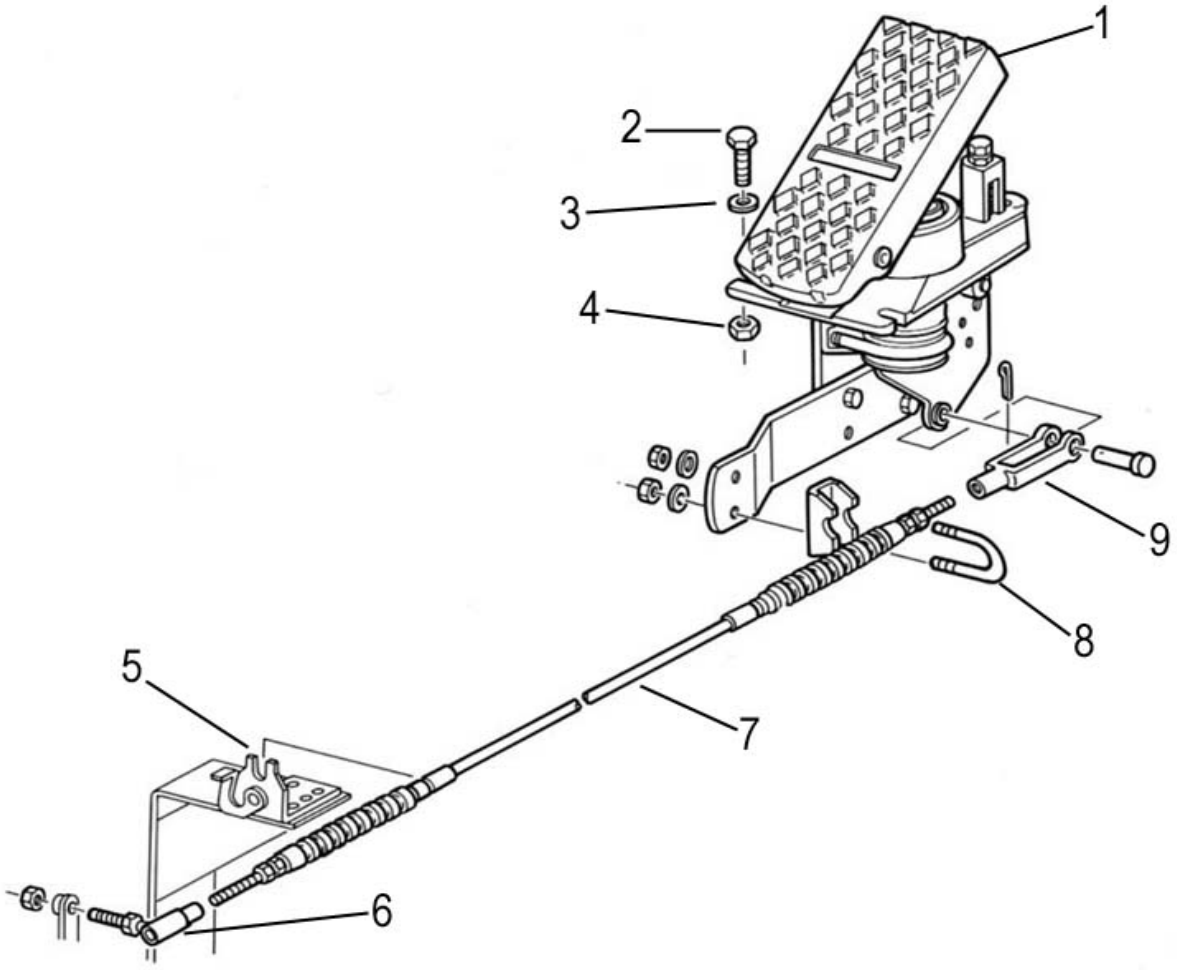


Item	Part Number	Qty	Description
1	A-TT4-00293	1	THROTTLE PEDAL
2	NPN	3	5/16-18 X 1.25 GR8 HCS
3	NPN	3	1/4 FLAT WASHER
4	NPN	3	SPACER 1" OD X 1" LONG

*TUG MODEL AND SERIAL NUMBER REQUIRED TO ORDER THIS PART

OPERATOR COMPARTMENT

ACCELERATOR PEDAL ASSEMBLY —YANMAR TIER II DIESEL

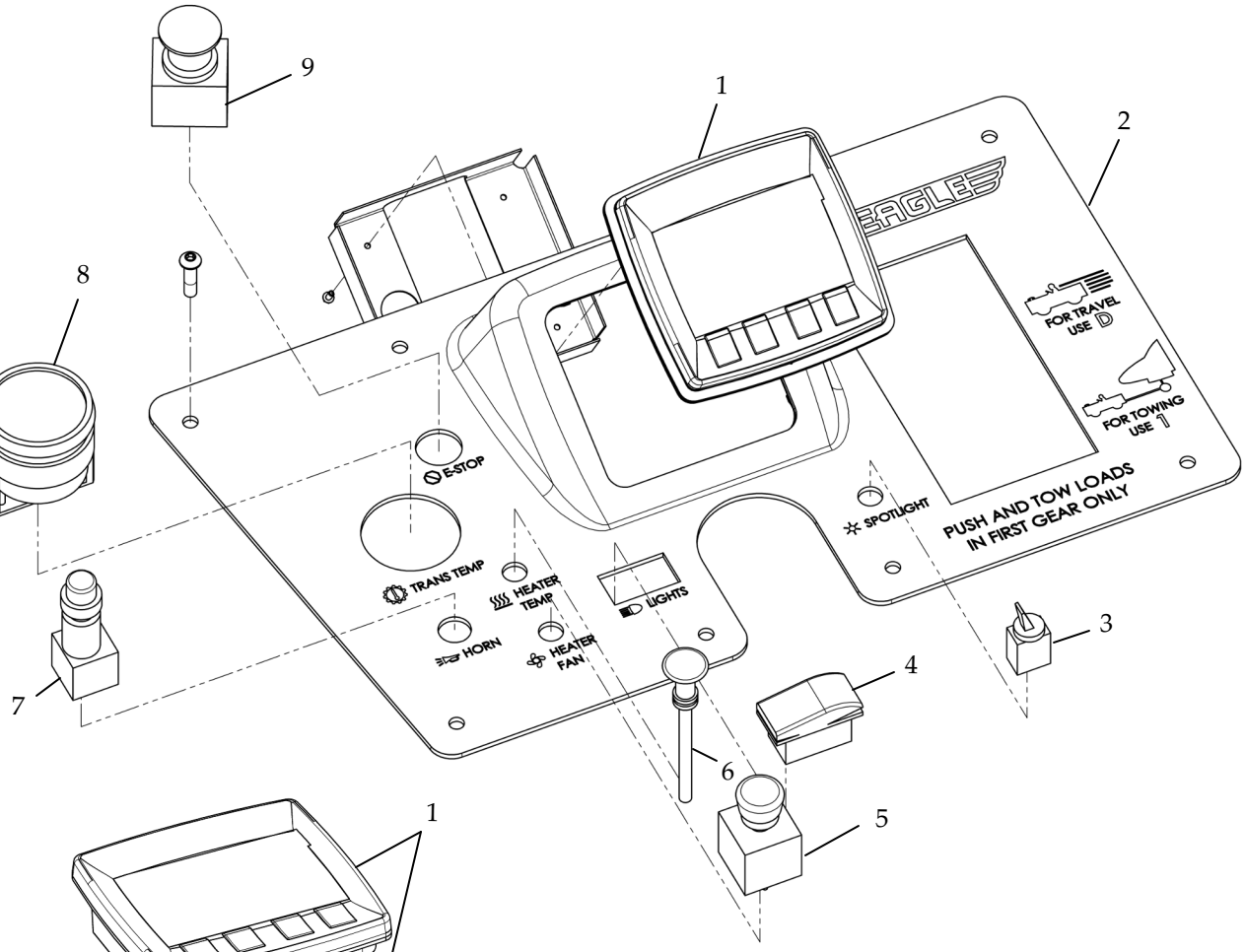


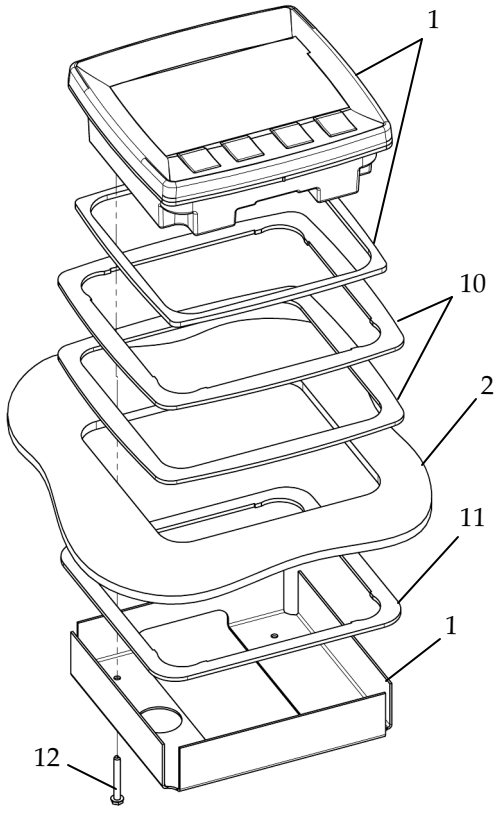
Item	Part Number	Qty	Description
1	A-TT4-00281-1	1	FOOT PEDAL ASSEMBLY
2	NPN	3	SCREW-HEX CAP-1/4-20 X 1.00 G8
3	NPN	3	WASHER-FLAT-1/4
4	NPN	3	NUT-LOCK-1/4-20
5	A-TT4-00285*	1	ACCEL CABLE BRACKET
6	A-TT4-00287	1	BALL JOINT KIT - NUT INCLUDED
7	A-USAT5-00282	1	ACCELERATOR CABLE ASSEMBLY
8	A-TT4-00247	1	ACCELERATOR U-BOLT KIT
9	A-TT4-00283-1	1	ACCELERATOR CLEVIS-PIN KIT

*TUG MODEL AND SERIAL NUMBER REQUIRED TO ORDER THIS PART

OPERATOR COMPARTMENT

INSTRUMENT PANEL WITH SAUER DISPLAY





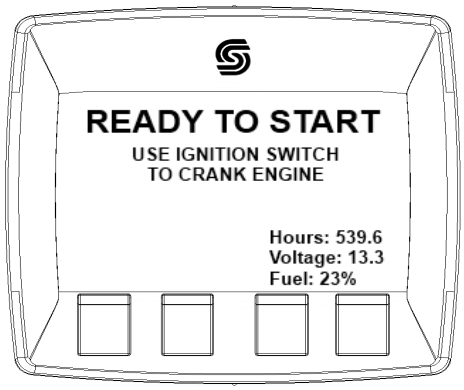
NOTE: FOR TIER III AND FOR TIER II UNITS MANUFACTURED BEFORE FEB 1, 2012

OPERATOR COMPARTMENT

INSTRUMENT PANEL WITH SAUER DISPLY

Item	Part Number	Qty	Description
1	A-TT8-00417	1	TT ELECTRONIC DISPLAY
2	C-TT4-00411-1	1	DASH PANEL (NO INSTRUMENTS)
3	A-TT4-00433-1	1	SPOTLIGHT TOGGLE SWITCH(OPTIONAL)
4	A-TT4-00423-2	1	HEADLIGHT SWITCH
5	A-TT4-00609	1	HEATER FAN SWITCH(OPTIONAL)
6	A-TT4-00608	1	HEATER CONTROL CABLE(OPTIONAL)
7	A-TT4-00428	1	HORN BUTTON
8	AE-OPT-0152	1	TRANS TEMP GAUGE (OPTIONAL)
9	AE-OPT-0066	1	E-STOP (OPTIONAL)
10	A-TT8-00421	1	SAUER MOUNTING KIT
11	A-TT8-00418	1	DISPLAY MOUNTING RING
12	A-TT8-00413	4	M3X20 DISPLAY MOUNTING SCREW NOTE: MUST BE INSTALLED WITH THREAD LUBRICANT

Eagle Tugs TT-series Quick Start Guide



Powering up the tractor:

Verify that the transmission is in “Park” or “Neutral.”

Verify that the parking brake has been set.

Turn the ignition switch to the “ON” position.

Starting the Engine:

Once the Sauer display panel has booted up, it will prompt you to turn the ignition switch to crank the engine.

**For cold weather operation, the display will prompt you to wait for the engine warm-up before prompting you to crank the*

engine.

NOTE: FOR TIER III AND FOR TIER II UNITS MANUFACTURED BEFORE FEB 1, 2012

Turning off the Engine:

Bring the tractor to a complete stop.

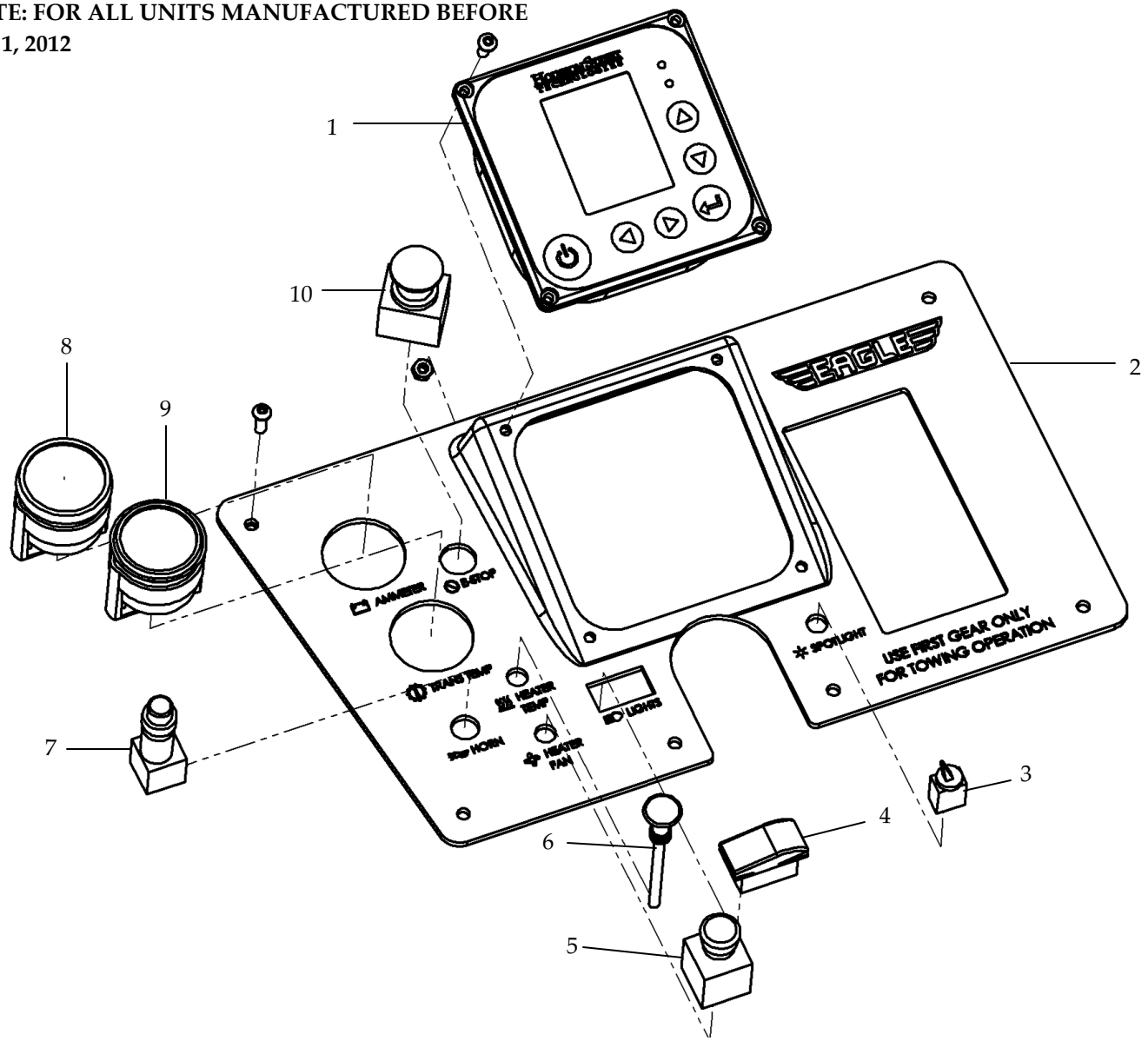
Set the parking brake.

Turn the ignition switch to the “OFF” position.

OPERATOR COMPARTMENT

INSTRUMENT PANEL WITH H30 DISPLAY

NOTE: FOR ALL UNITS MANUFACTURED BEFORE FEB 1, 2012

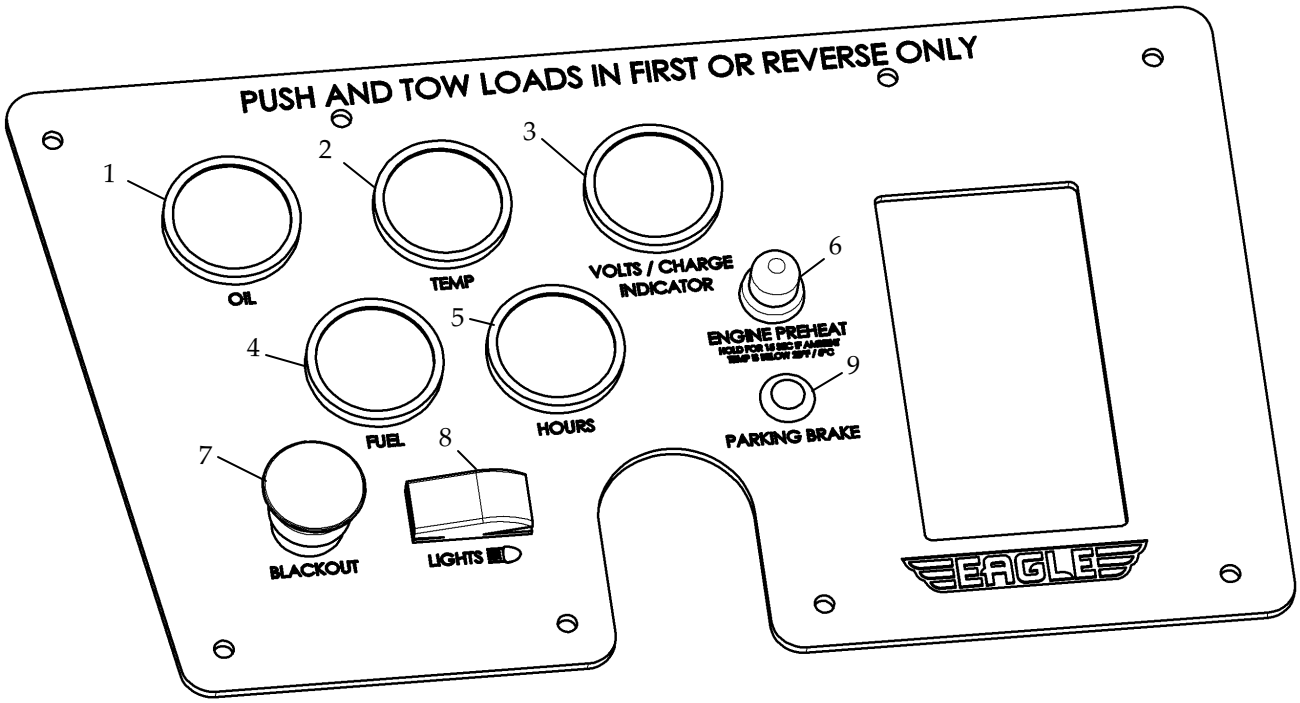


Item	Part Number	Qty	Description
1	A-TT8-00415	1	ELECTRONIC CONTROLLER DISPLAY
2	C-TT4-00411-1	1	DASH PANEL (NO INSTRUMENTS)
3	A-TT4-00433-1	1	SPOTLIGHT TOGGLE SWITCH(OPTIONAL)
4	A-TT4-00423-2	1	HEADLIGHT SWITCH
5	A-TT4-00609	1	HEATER FAN SWITCH(OPTIONAL)
6	A-TT4-00608	1	HEATER CONTROL CABLE(OPTIONAL)
7	A-TT4-00428	1	HORN BUTTON
8	AE-OPT-0084	1	AMMETER GUAGE (OPTIONAL)
9	AE-OPT-0152	1	TRANS TEMP GAUGE (OPTIONAL)
10	AE-OPT-0066	1	E-STOP (OPTIONAL)

OPERATOR COMPARTMENT

INSTRUMENT PANEL WITH SAUER DISPLAY

NOTE: FOR TIER II MANUFACTURED FEBRUARY 2012 TO PRESENT

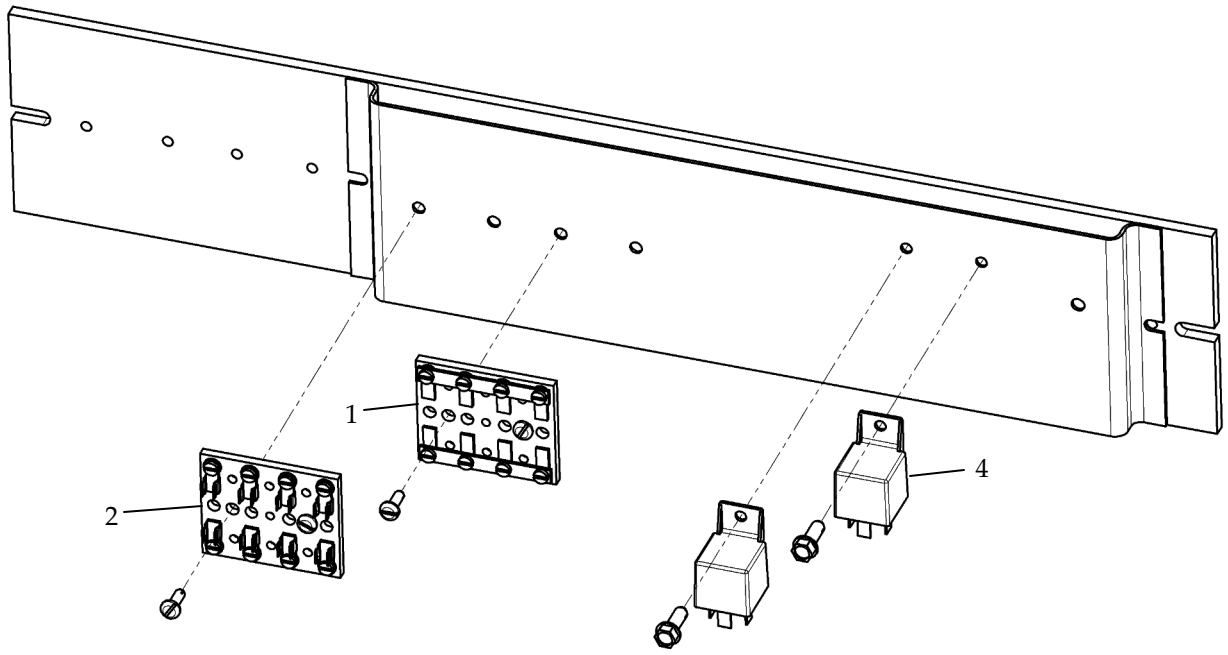


Item	Part Number	Qty	Description
1	A-TT4-00412	1	OIL PRESSURE GAUGE
2	A-TT4-00417	1	TEMPERATURE GAUGE
3	A-TT4-00416	1	VOLTMETER
4	A-TT4-00415	1	FUEL GAUGE
5	A-TT4-00418	1	HOURMETER
6	A-TT4-00428	1	PREHEAT BUTTON
7	AE-OPT-0066	1	BLACKOUT BUTTON
8	A-TT4-00423-2	1	HEADLIGHT SWITCH
9	A-TT4-00306	1	PARKING BRAKE ON INDICATOR

OPERATOR COMPARTMENT

ELECTRICAL BOARD

NOTE: FOR ALL UNITS MANUFACTURED BEFORE FEB 1, 2012

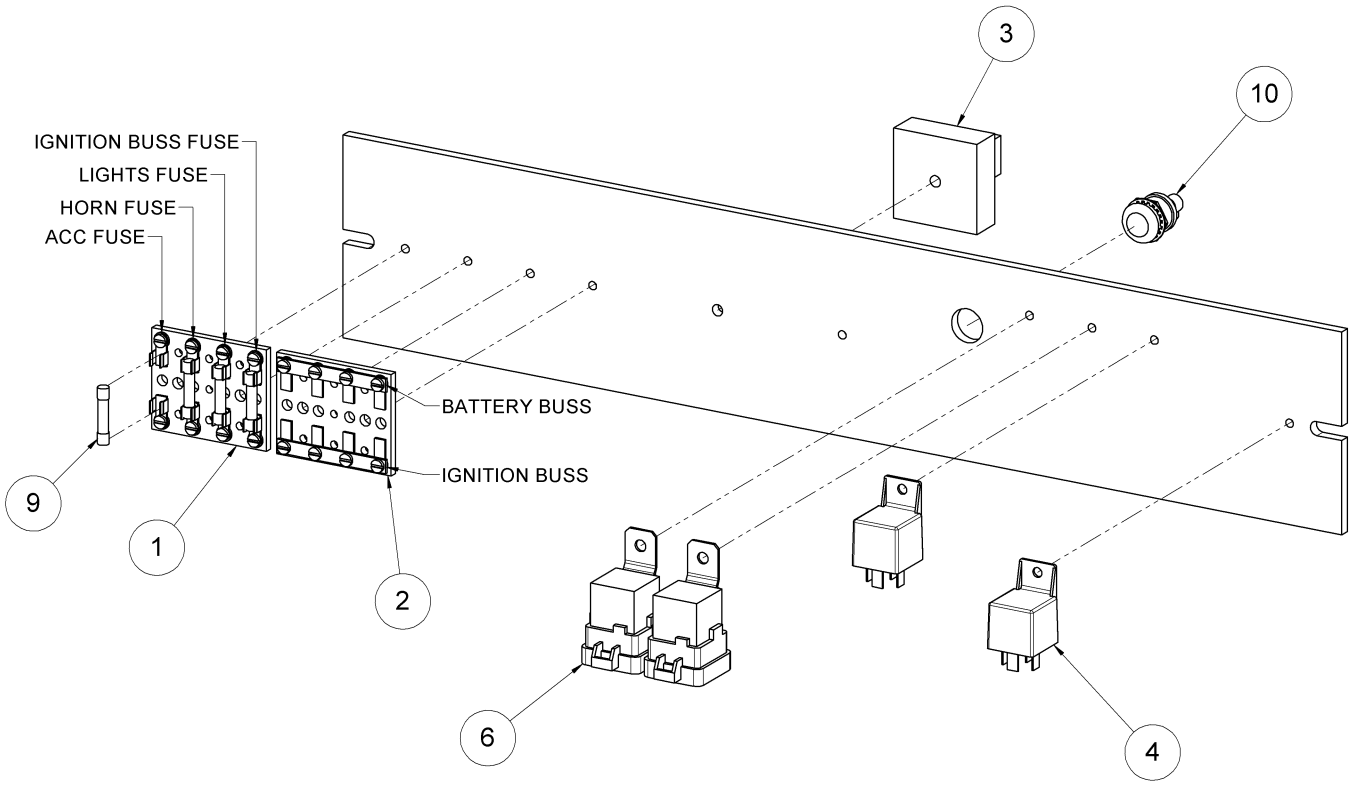


Item	Part Number	Qty	Description
1	A-TT4-00300	1	TERMNAL BLOCK
2	A-TT4-00299	1	FUSE BLOCK
4	A-TT4-00303-1	2	HORN RELAY
5	A-TT3-0010	4	25 AMP ROUND FUSE (NOT SHOWN)

LIGHTS & ELECTRICAL

ELECTRICAL BOARD

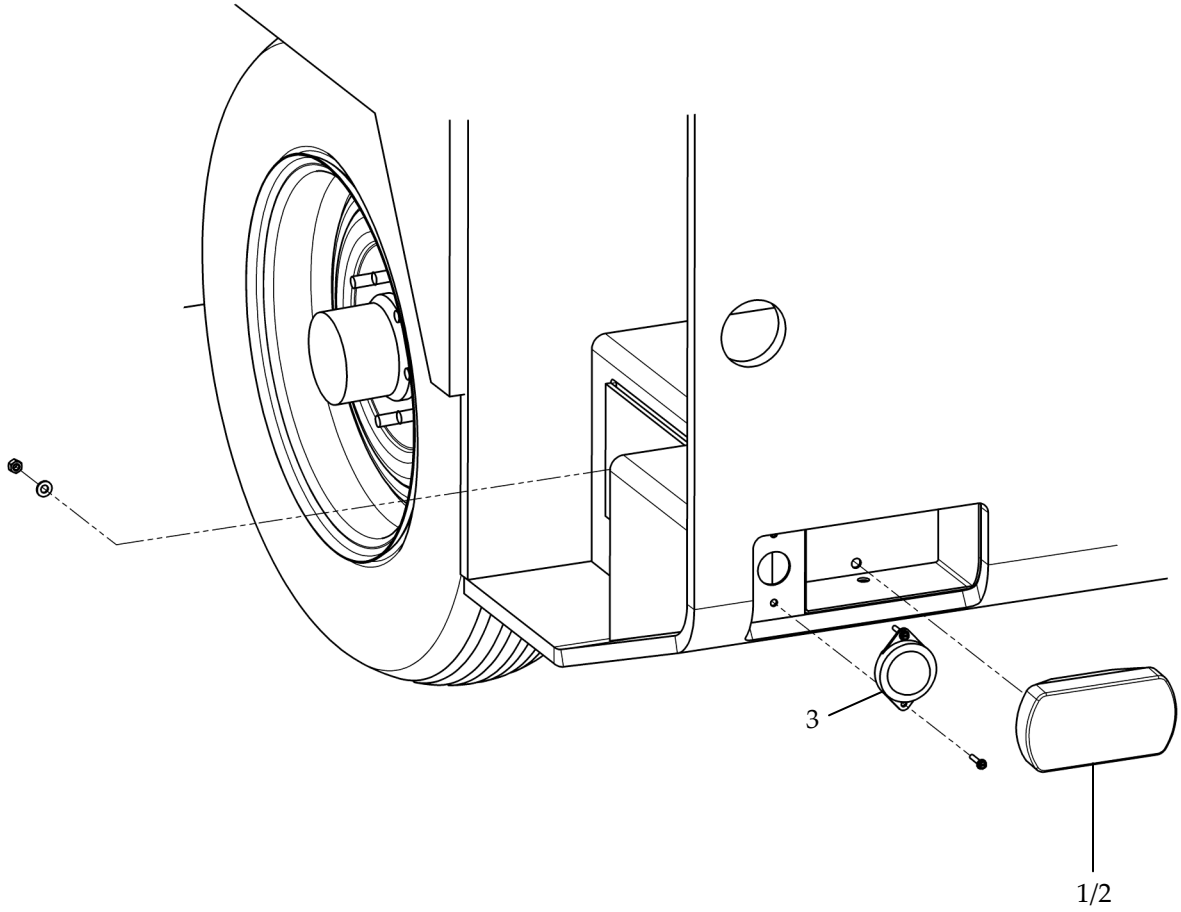
TRACTORS MANUFACTURED FEBRUARY 2012 TO PRESENT

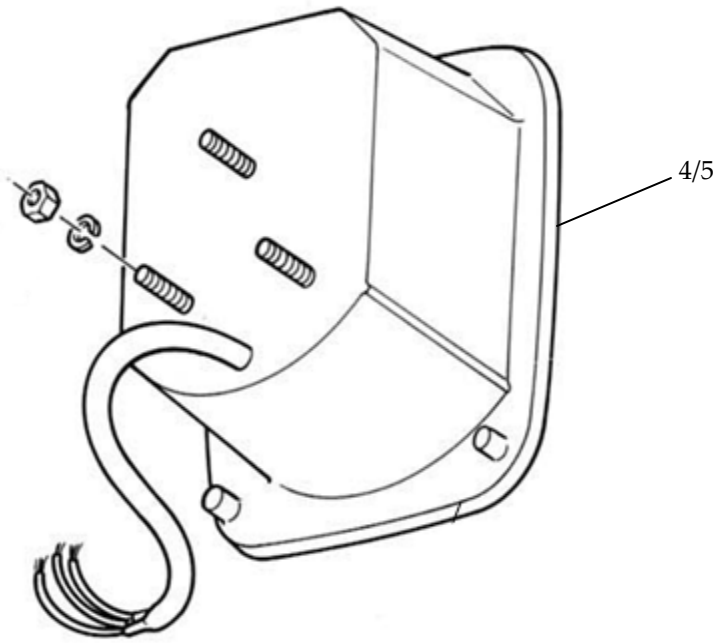


Item	Part Number	Qty	Description
1	A-TT4-00299	1	FUSE BLOCK
2	A-TT4-00300	1	BUSS BLOCK
3	A-TT4-00451	1	TIER II ONLY - SHUTDOWN TIMER
4	A-TT4-00303-1	2	RELAY - HORN, IGNITION
6	NVSP-31-002-CA	3	TIER II ONLY - SEALED RELAY - LIGHT BLACKOUT, ENGINE SHUTDOWN, PARK BRAKE SHUTDOWN (NOT SHOWN)
9	A-TT3-0010	4	25 AMP ROUND FUSE
10	A-TT4-00306	1	TIER II ONLY - WARNING LIGHT - ALT EXCITE BULB

LIGHTS & ELECTRICAL

HEADLIGHT, TAILLIGHT, STROBE AND BEACON OPTIONS





LIGHTS & ELECTRICAL

HEADLIGHT, TAILLIGHT, STROBE AND BEACON OPTIONS

Item	Part Number	Qty	Description
1	ATT4-00291-5	2	HEADLIGHT
2	NVSP-05-007-CA	2	LED HEADLIGHT (OPTIONAL)
3	A-SATS-00293	2	TURN INDICATOR YELLOW
4	A-TT4-00292	2	TAILLIGHT
5	M42220	2	LED TAILLIGHT (OPTIONAL)
6	AE-OPT-0002	1	ROTATING BEACON(OPTION NOT SHOWN)
7	AE-OPT-0007	1	AMBER STROBE(OPTION NOT SHOWN)

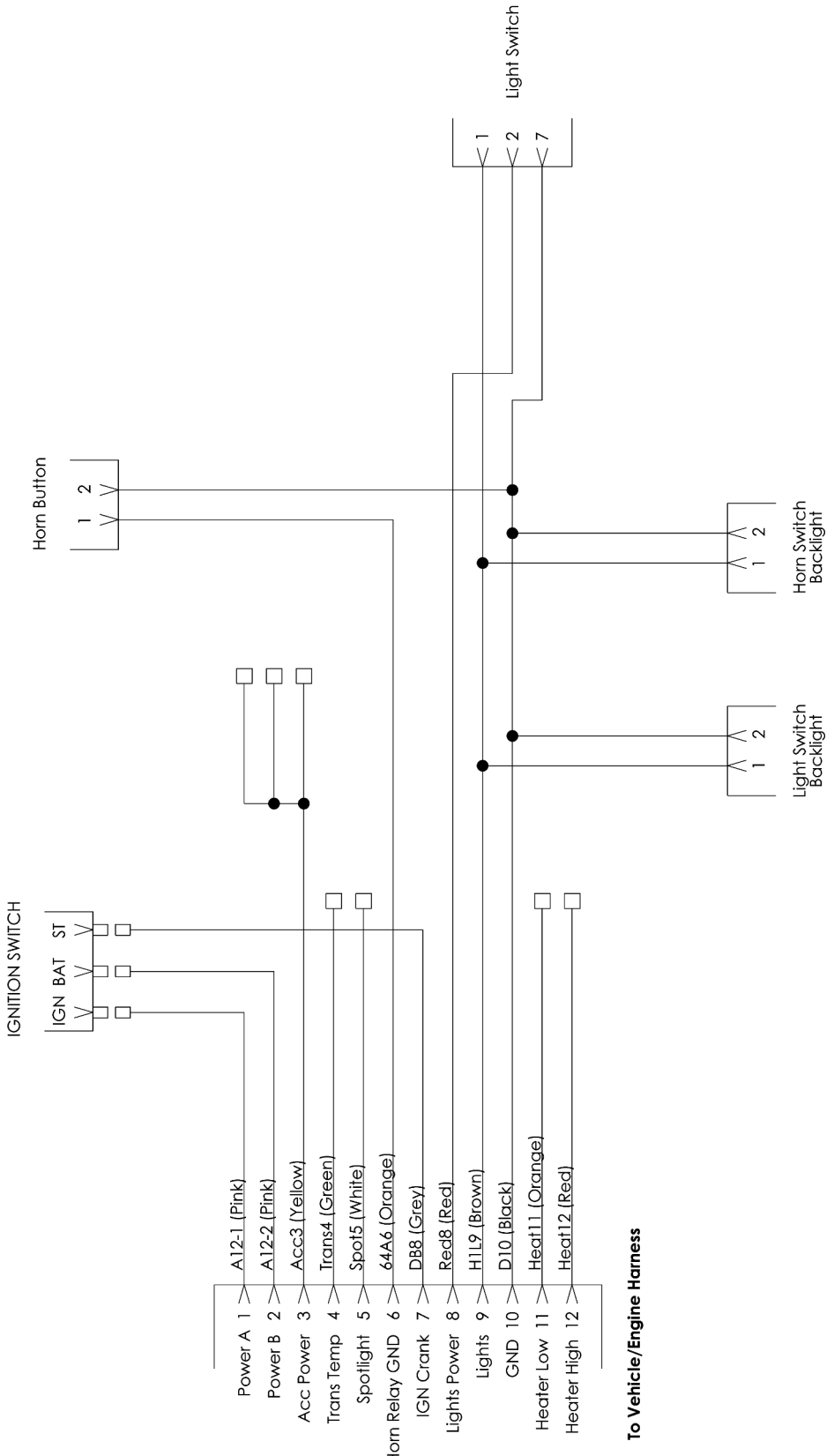
REPLACEMENT BULBS & TAIL LENS

Item	Part Number	Qty	Description
1	H3	2	REPLACEMENT BULB FOR A-TT4-00291-5
2	1157	4	REPLACEMENT BULB FOR A-SATS-00293 & BRAKE LIGHT
3	1157-A24 LED	2	LED REPLACEMENT BULB FOR A-SATS-00293 (OPTIONAL)
4	1156	2	REPLACEMENT BULB FOR REVERSE LIGHT
5	73-1912	2	TAIL LENS COVER
6	R5012BH	1	REPLACEMENT BULB FOR AE-OPT-0002
7	129	1	REPLACEMENT BULB FOR AE-OPT-0007

LIGHTS & ELECTRICAL

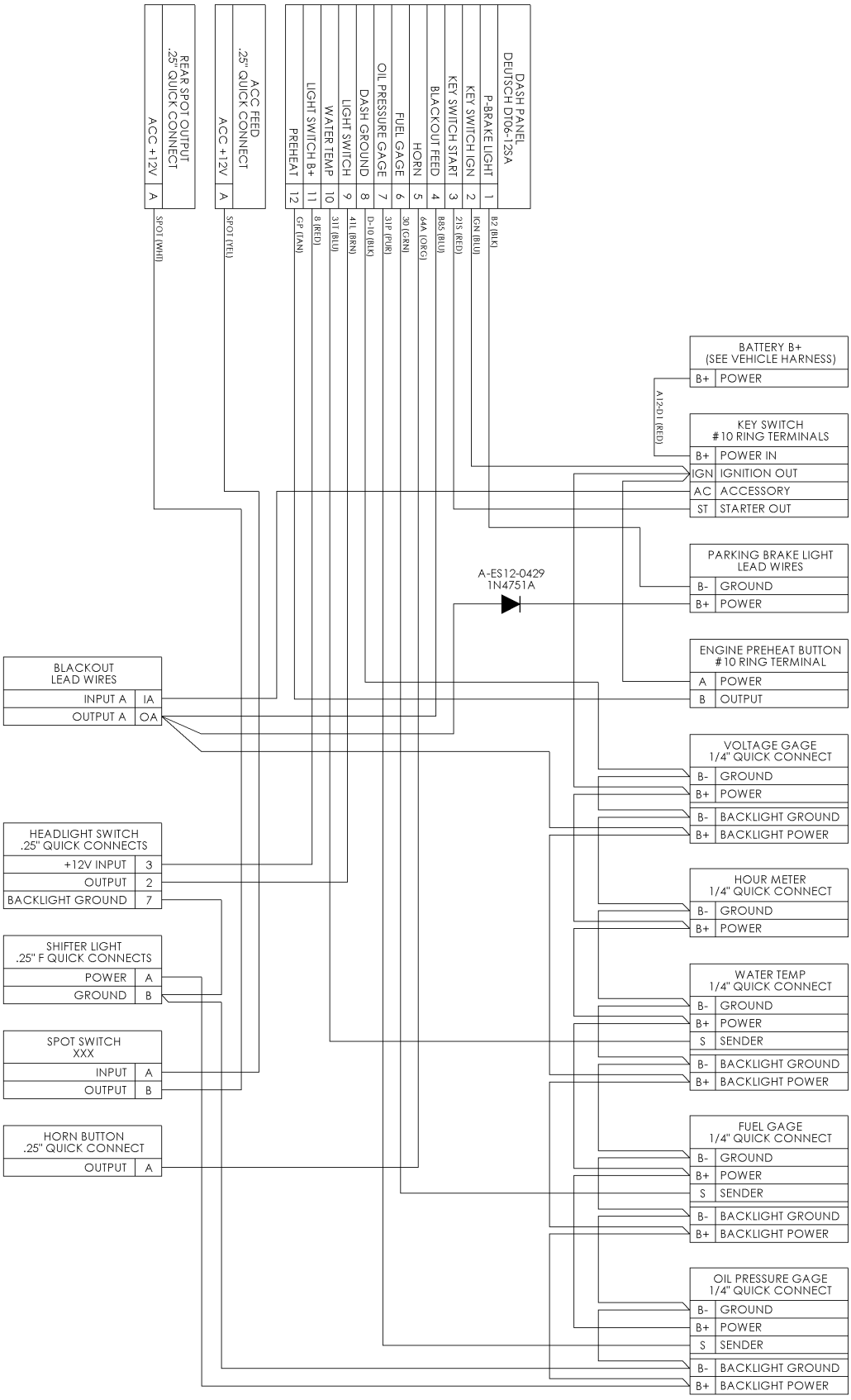
DASH WIRING HARNESS

NOTE: FOR ALL UNITS MANUFACTURED BEFORE FEB 1, 2012



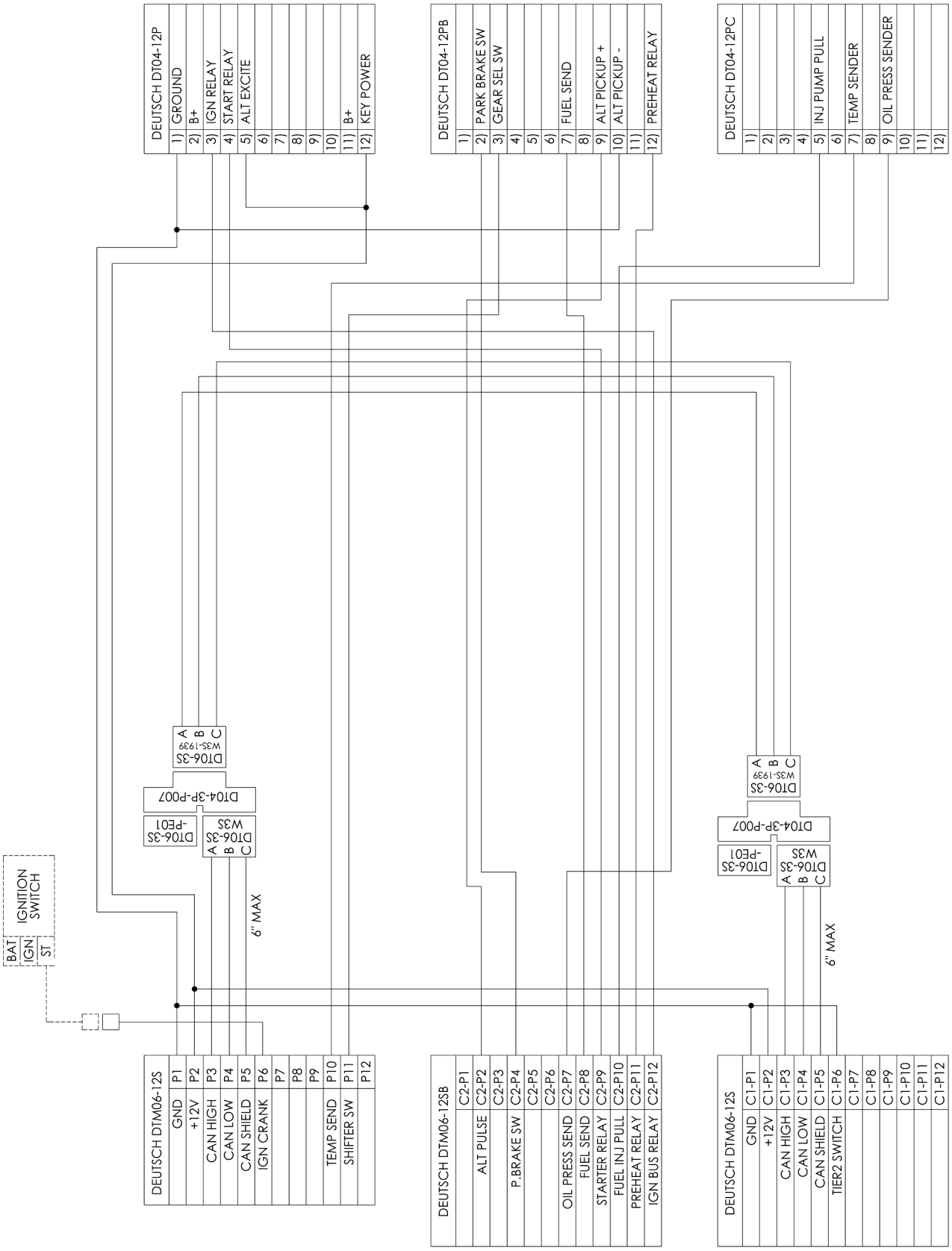
LIGHTS & ELECTRICAL

DASH WIRING HARNESS –TIER II MANUFACTURED FEB 2012 TO PRESENT



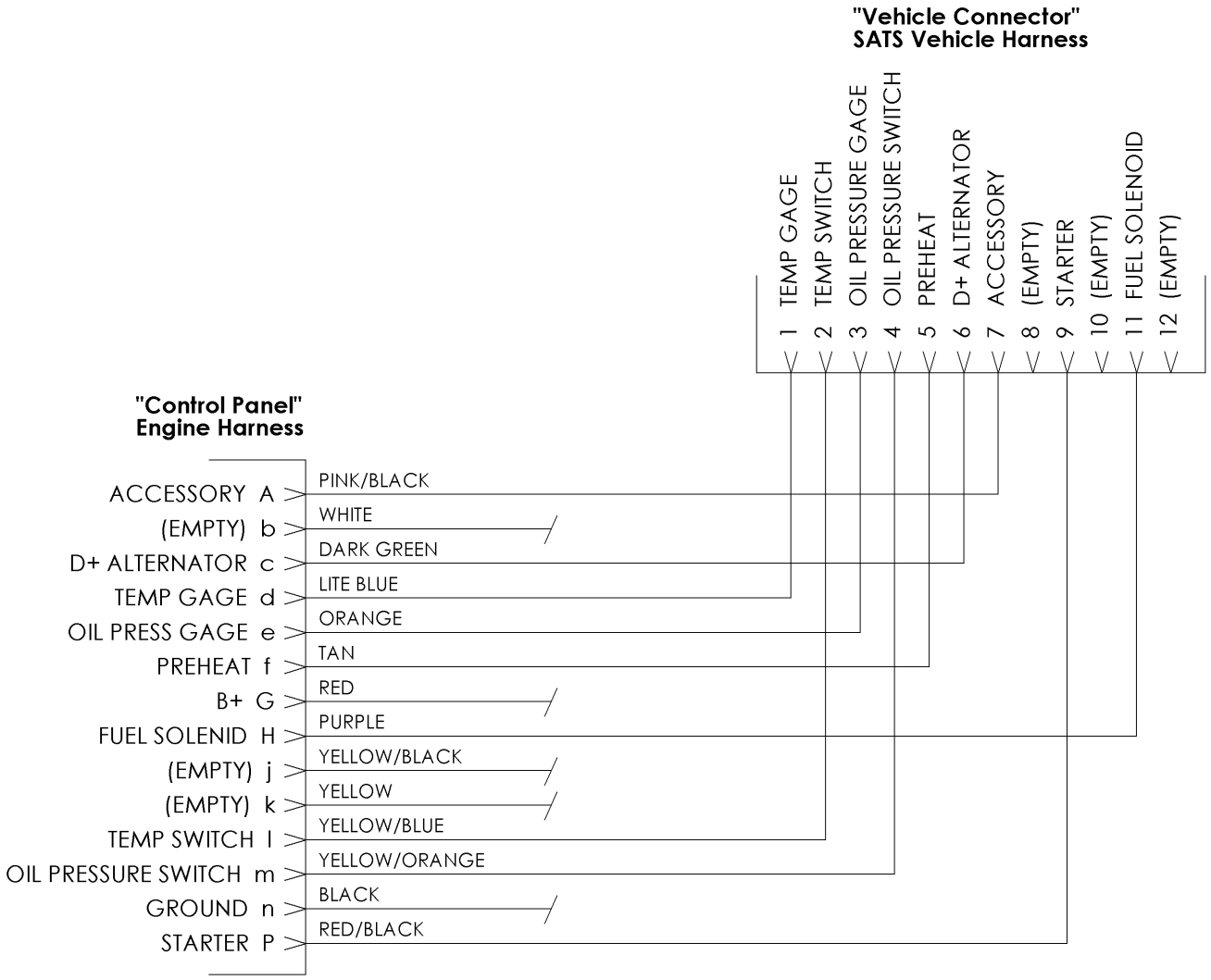
LIGHTS & ELECTRICAL

VEHICLE LOGIC HARNESS—FOR UNITS MANUFACTURED BEFORE FEB 1, 2012



LIGHTS & ELECTRICAL

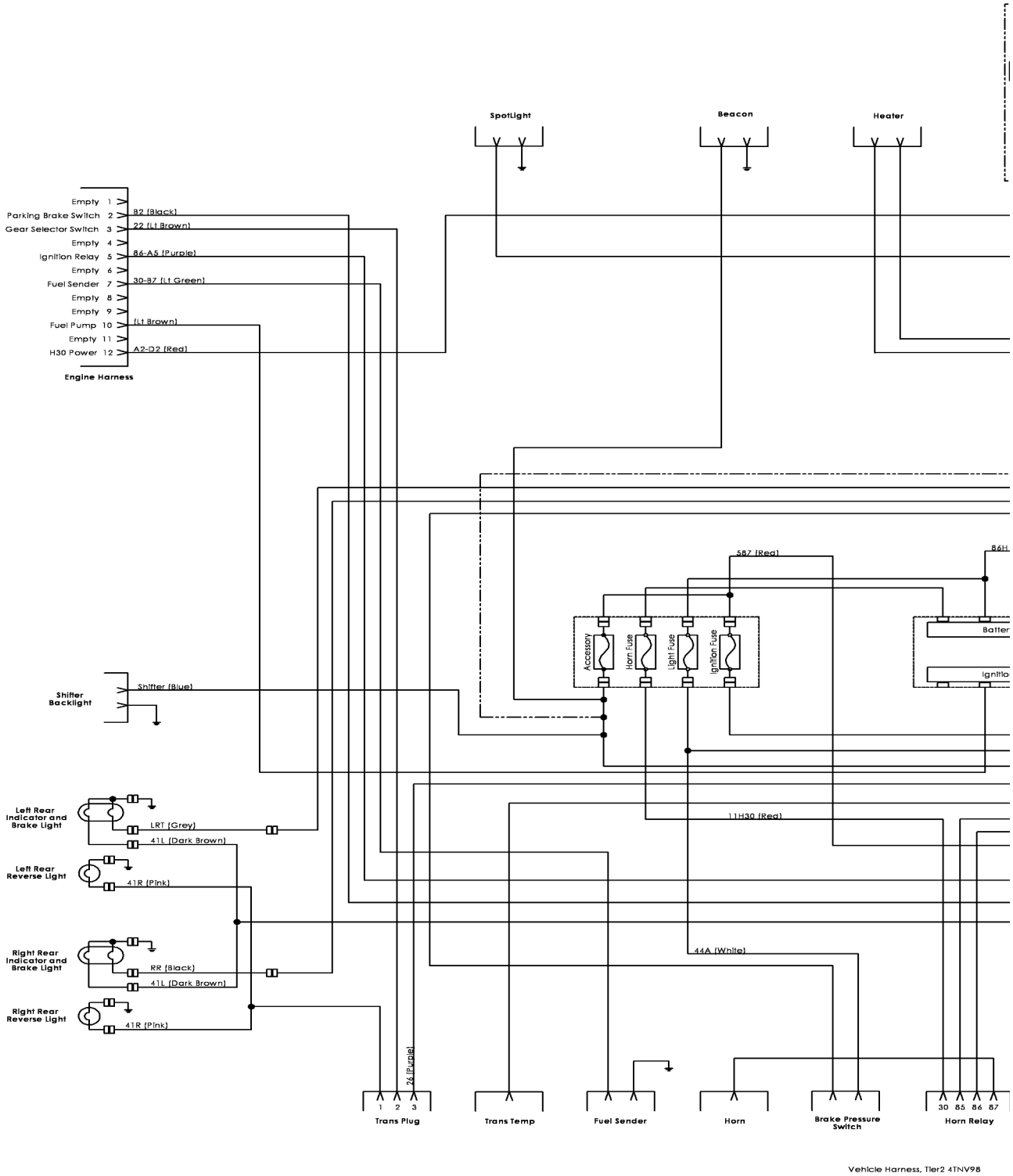
VEHICLE CONNECTOR HARNESS –TIER II MANUFACTURED FEB 2012 TO PRESENT



ELECTRICAL SCHEMATICS

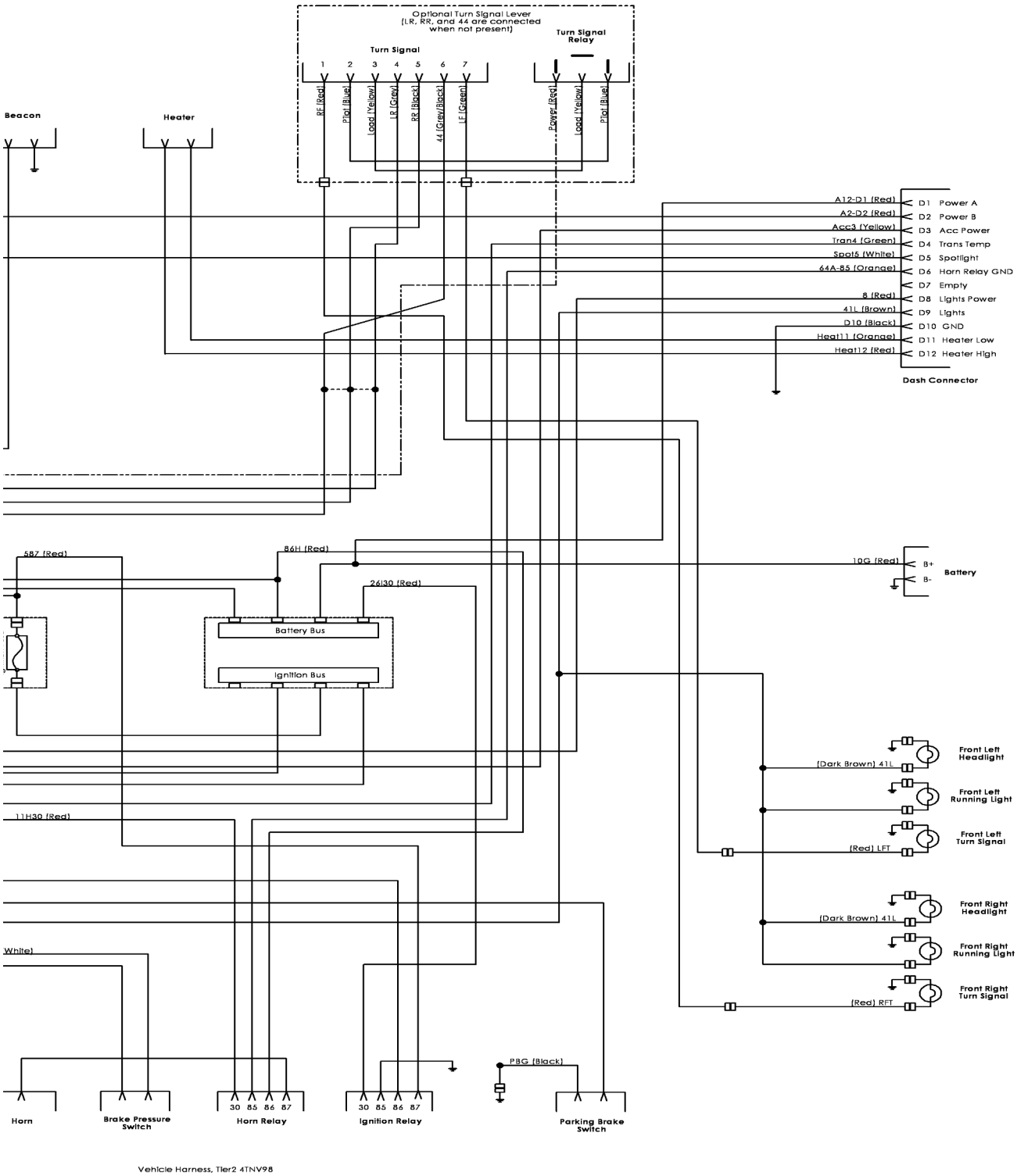
VEHICLE WIRING HARNESS—YANMAR TIER II DIESEL

NOTE: FOR UNITS MANUFACTURED BEFORE FEB 1, 2012



ELECTRICAL SCHEMATICS

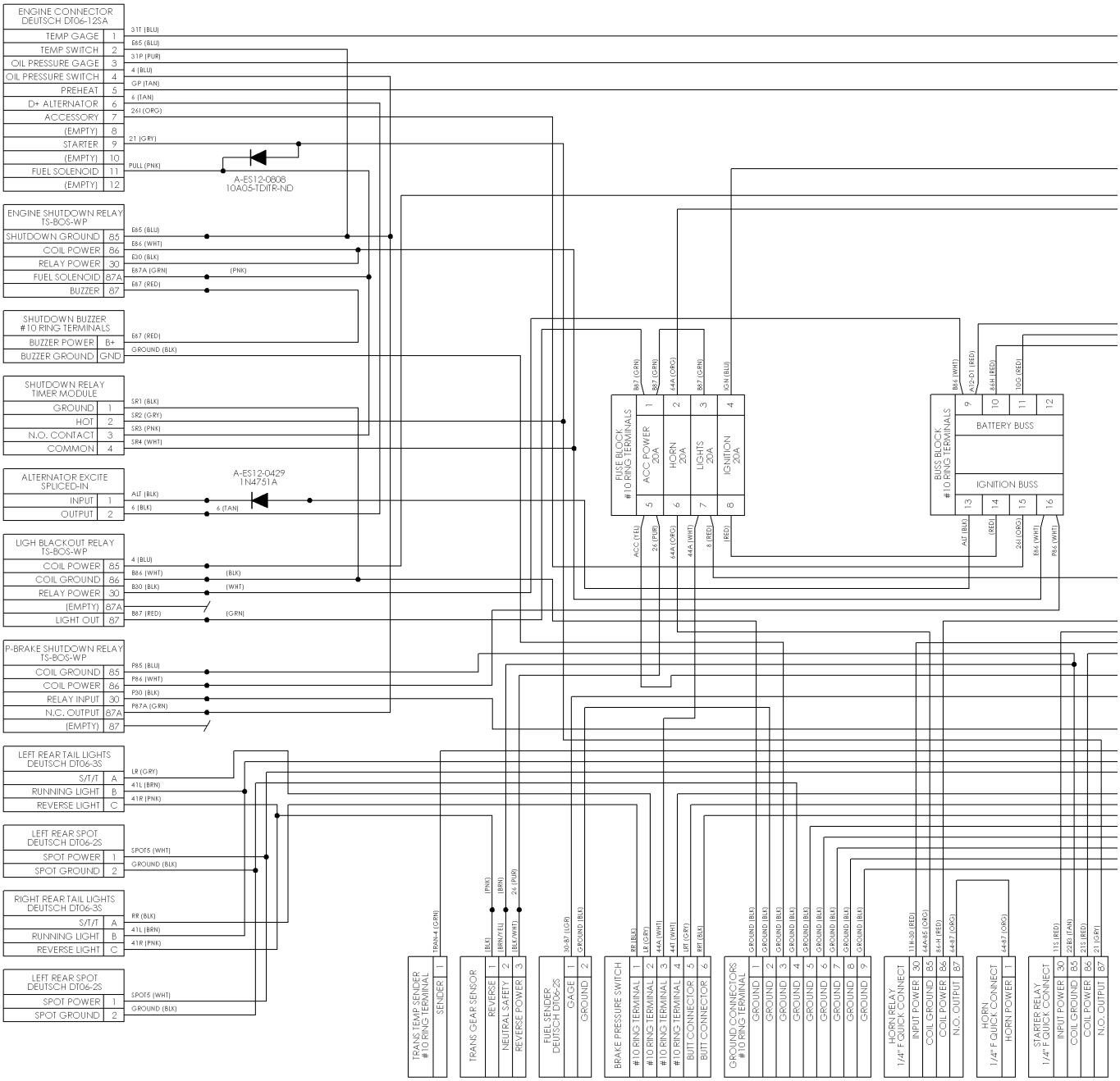
VEHICLE WIRING HARNESS— YANMAR TIER II DIESEL



Vehicle Harness, Tier2 4TNV98

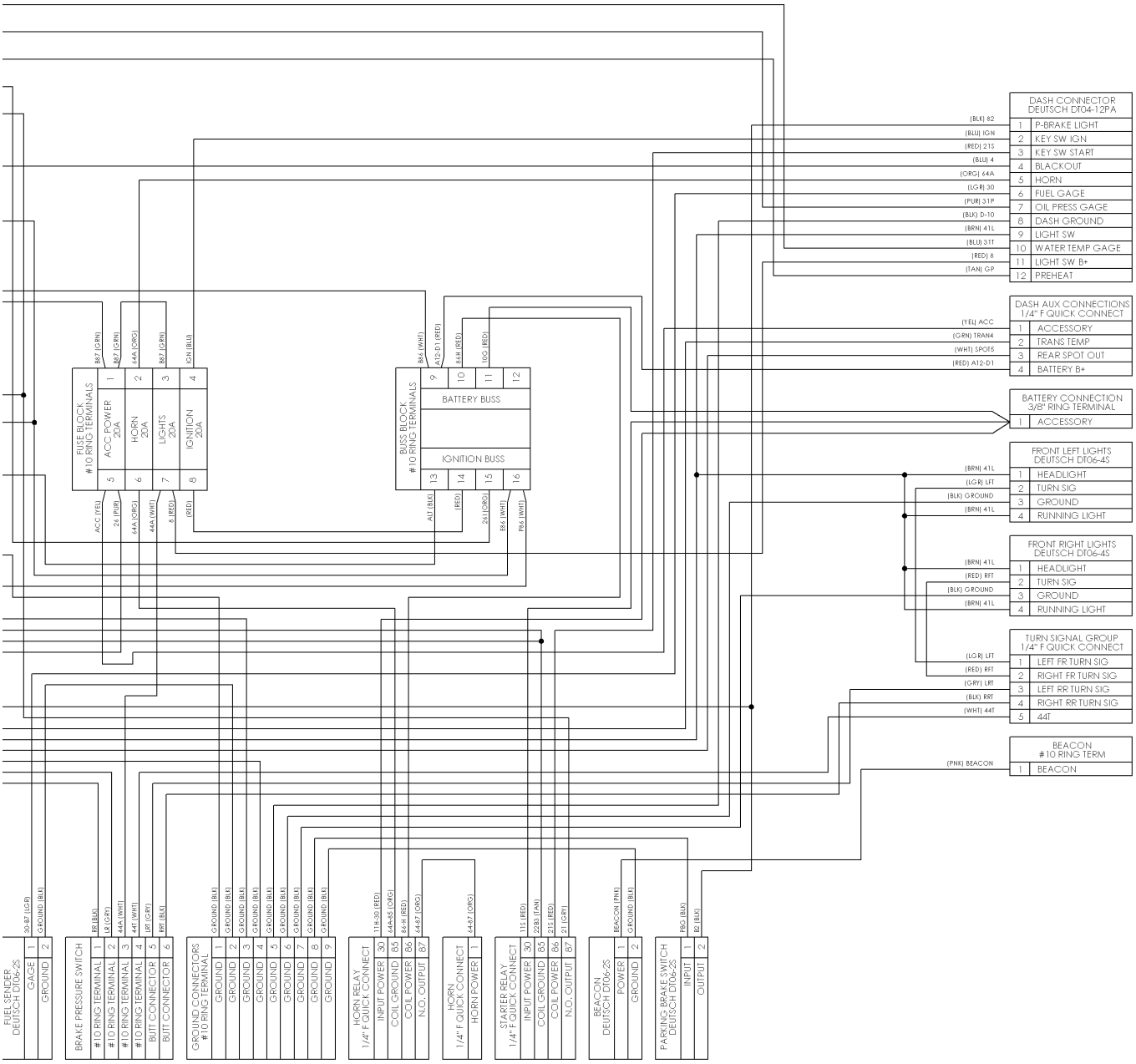
ELECTRICAL SCHEMATICS

VEHICLE WIRING HARNESS—YANMAR TIER II FEB 2012 TO PRESENT



ELECTRICAL SCHEMATICS

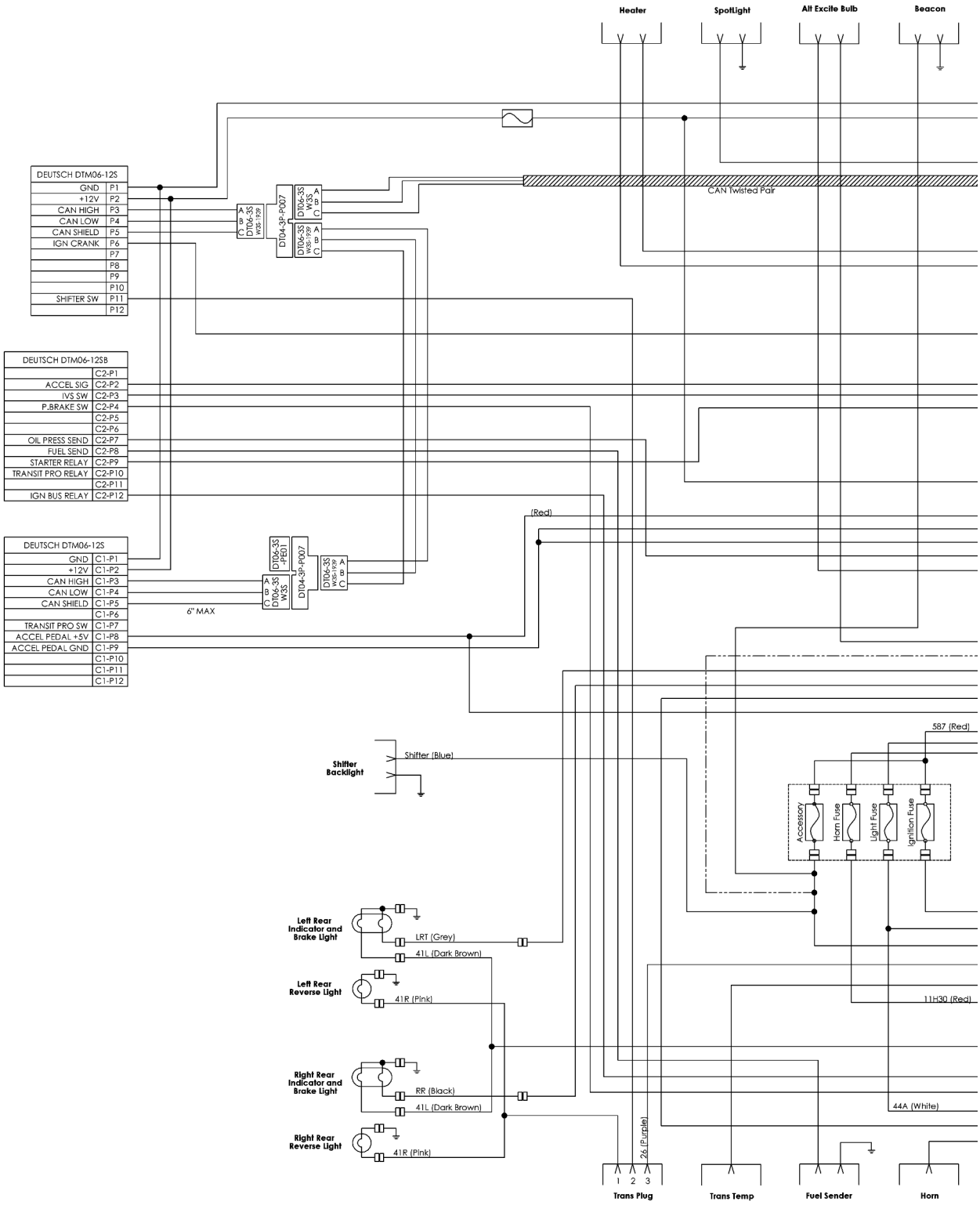
VEHICLE WIRING HARNESS— YANMAR TIER II FEB 2012 TO PRESENT



ELECTRICAL SCHEMATICS

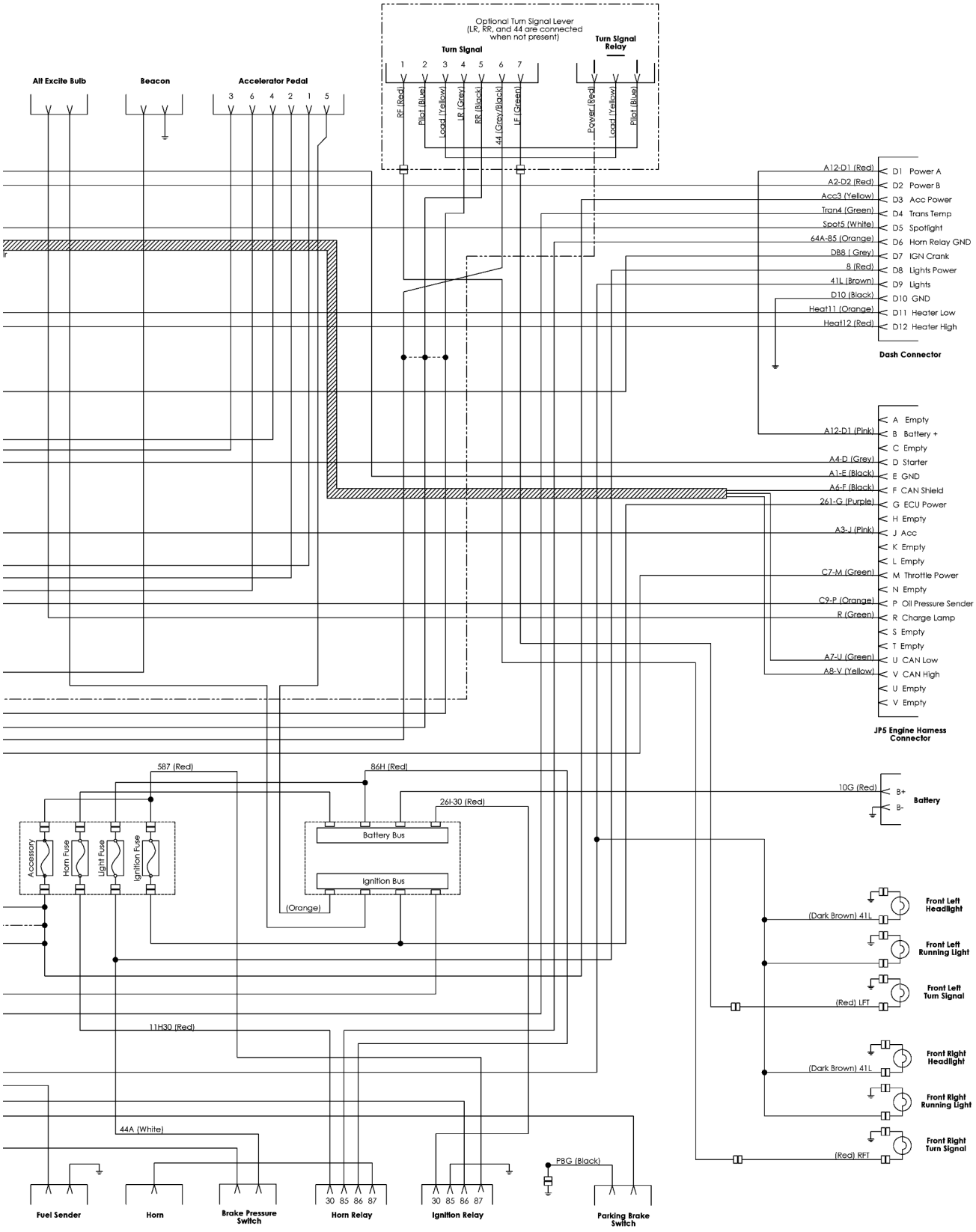
VEHICLE WIRING HARNESS—YANMAR TIER III DIESEL

NOTE: FOR ALL TIER III MANUFACTURED PRIOR TO OCTOBER 2013.



ELECTRICAL SCHEMATICS

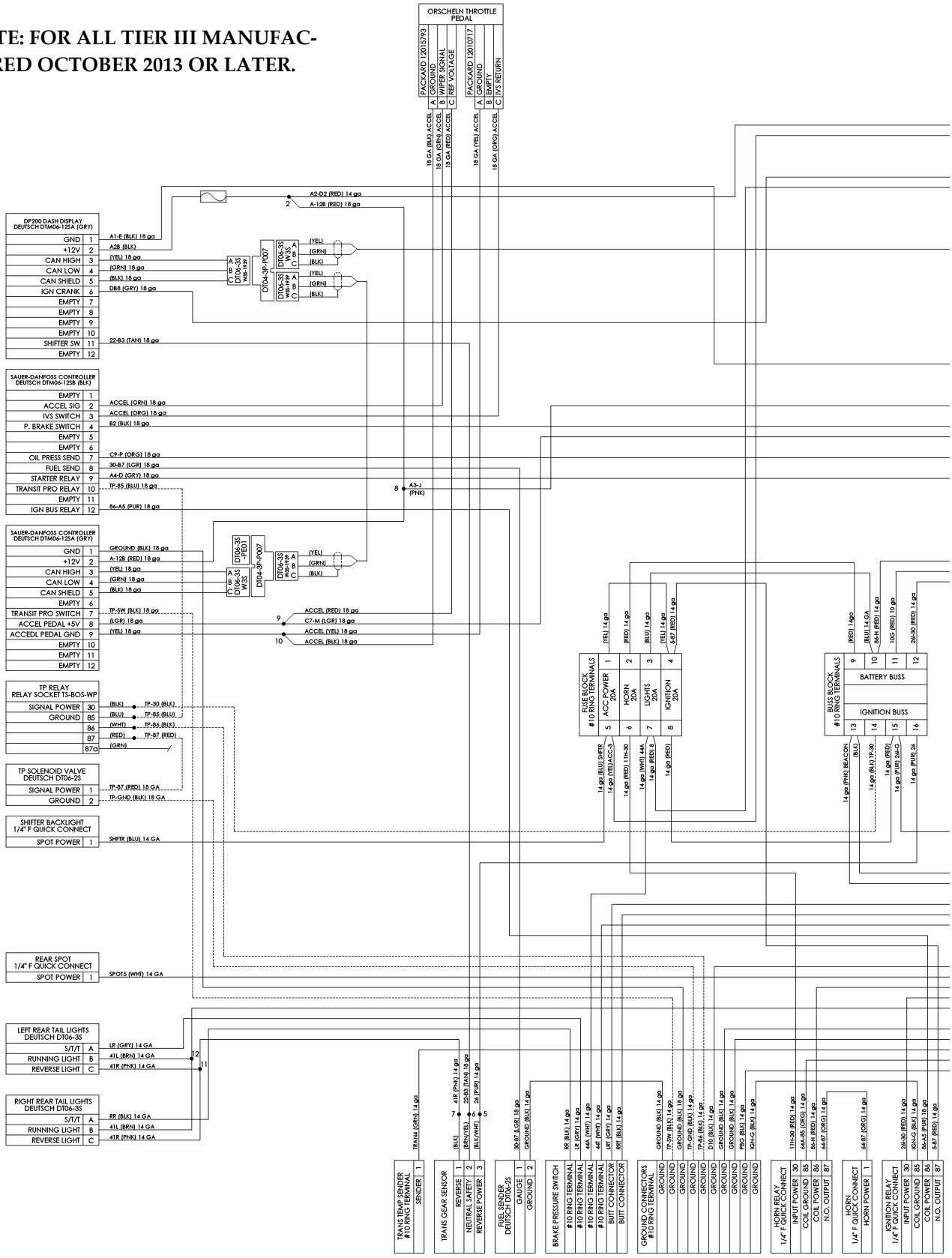
VEHICLE WIRING HARNESS – YANMAR TIER III DIESEL



ELECTRICAL SCHEMATICS

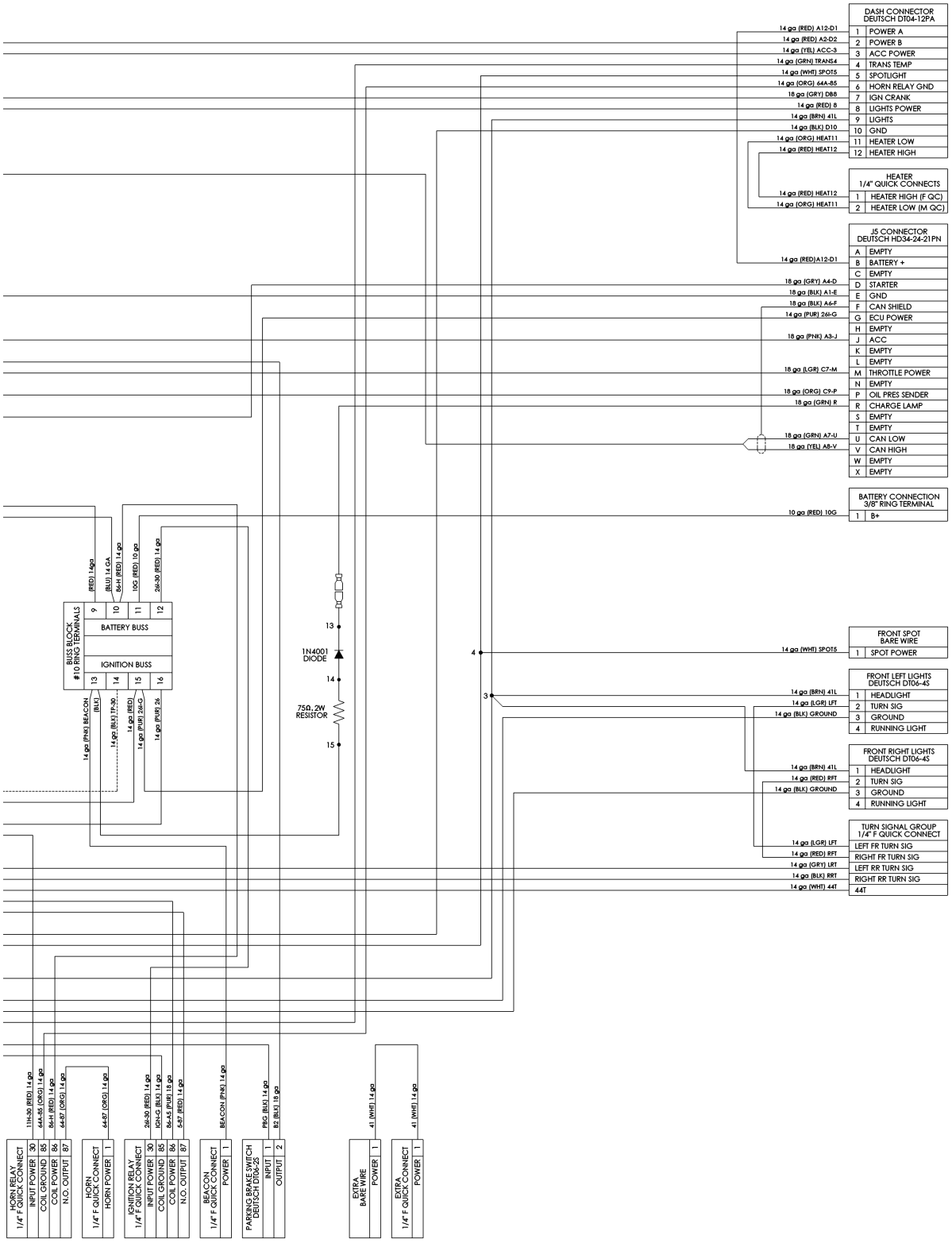
VEHICLE WIRING HARNESS—YANMAR TIER III DIESEL

NOTE: FOR ALL TIER III MANUFACTURED OCTOBER 2013 OR LATER.



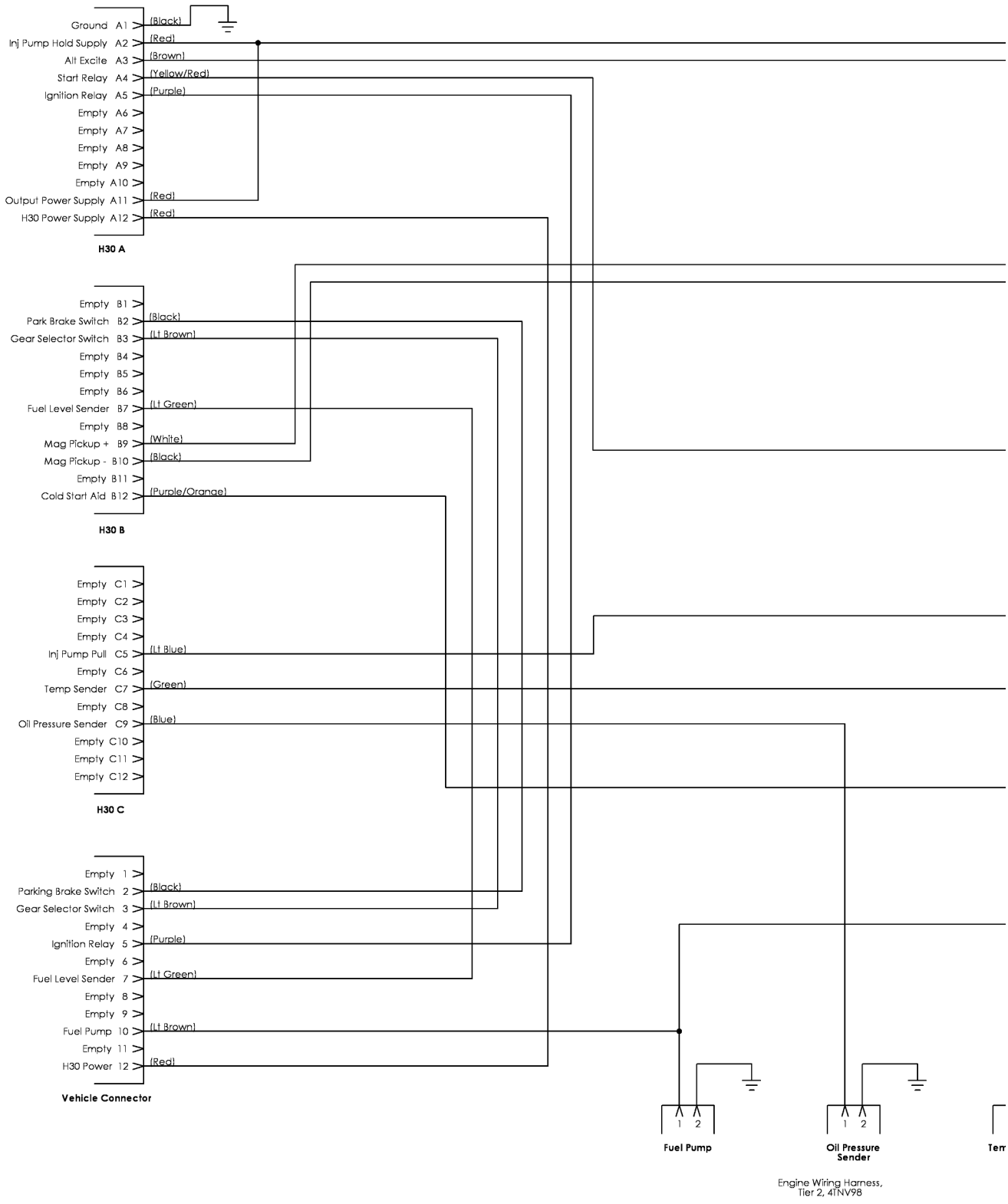
ELECTRICAL SCHEMATICS

VEHICLE WIRING HARNESS—YANMAR TIER III DIESEL



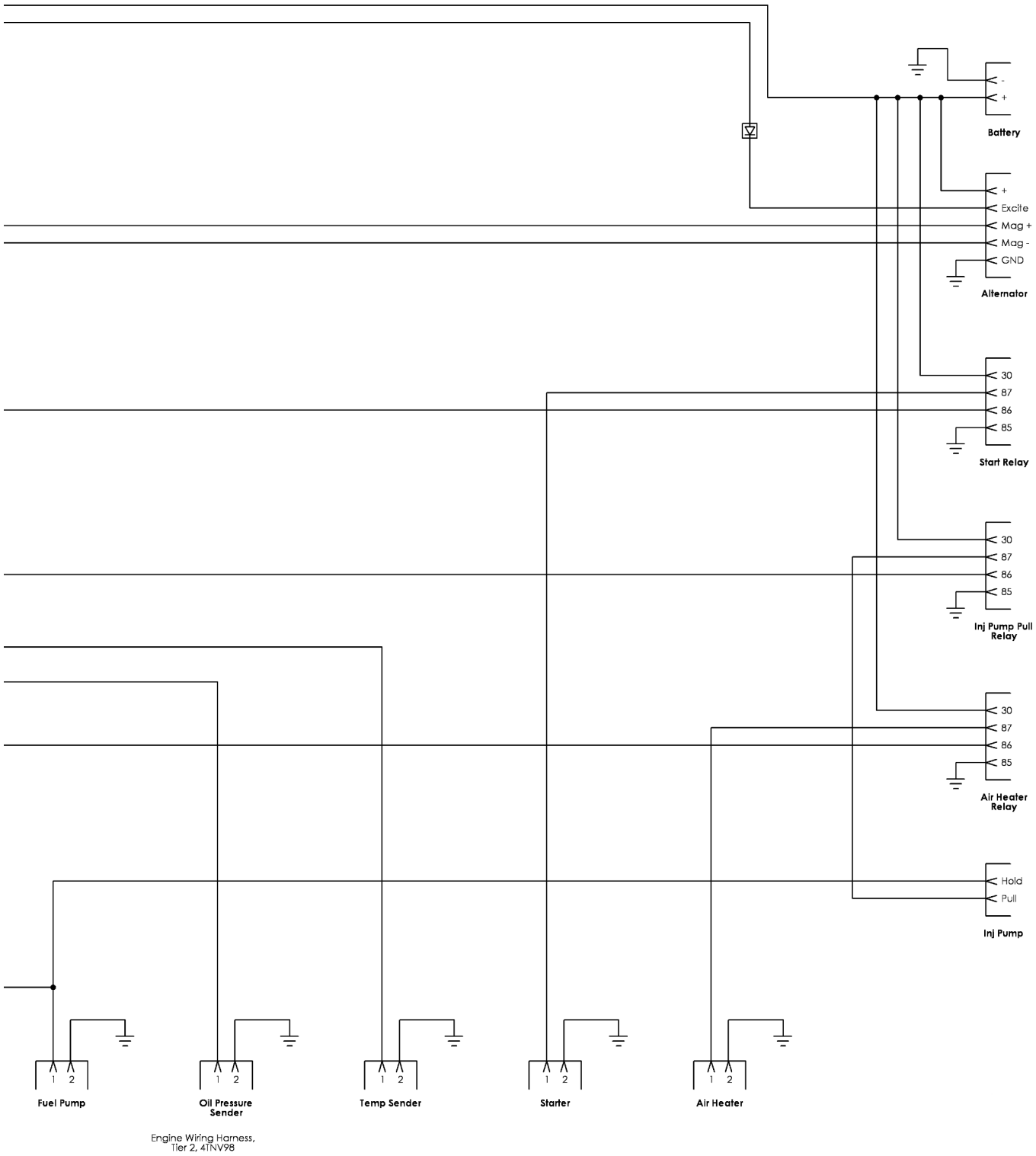
ELECTRICAL SCHEMATICS

YANMAR ENGINE WIRING HARNESS — FOR UNITS MANUFACTURED BEFORE FEB 1, 2012



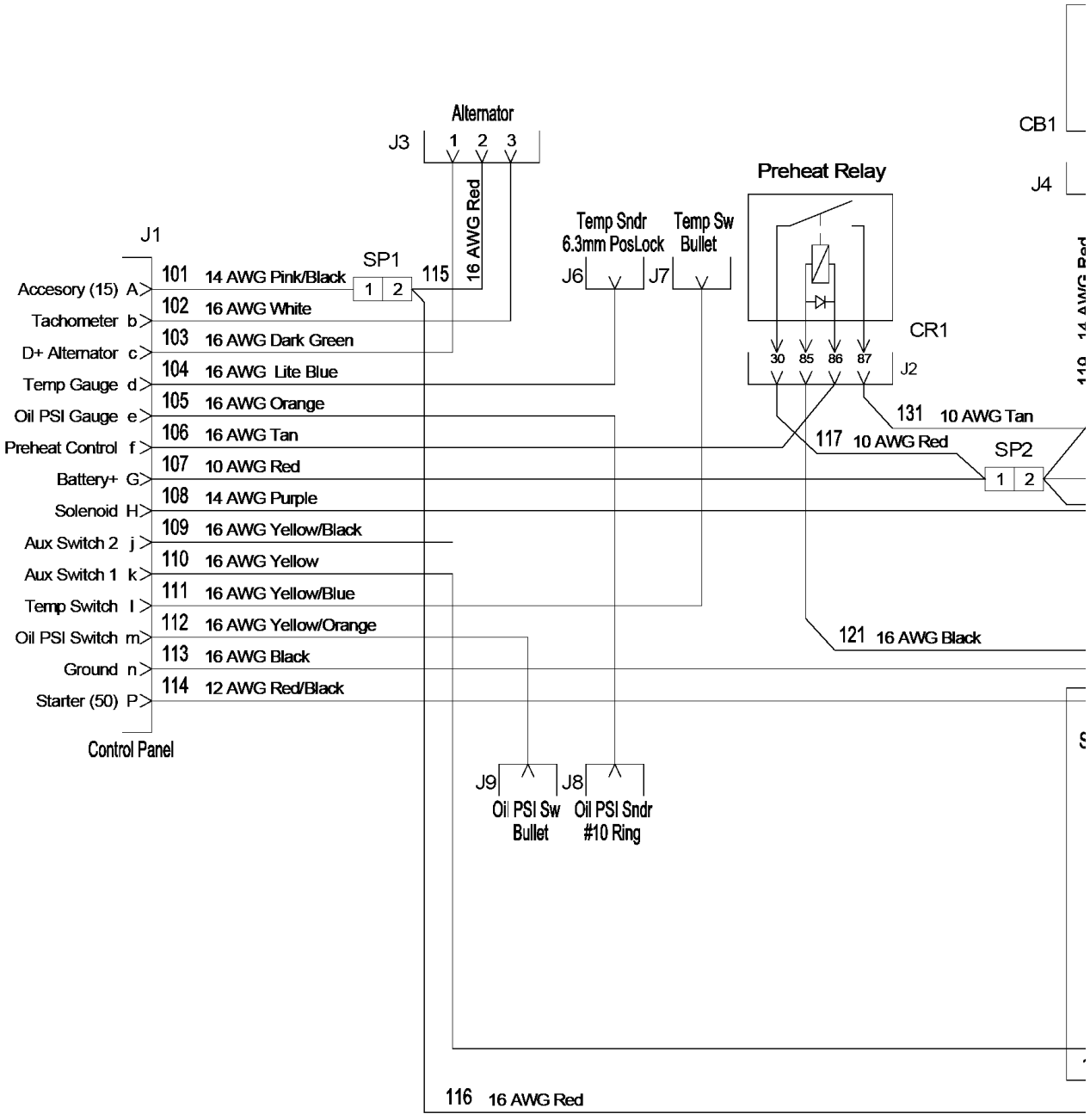
ELECTRICAL SCHEMATICS

YANMAR ENGINE WIRING HARNESS — FOR UNITS MANUFACTURED BEFORE FEB 1, 2012



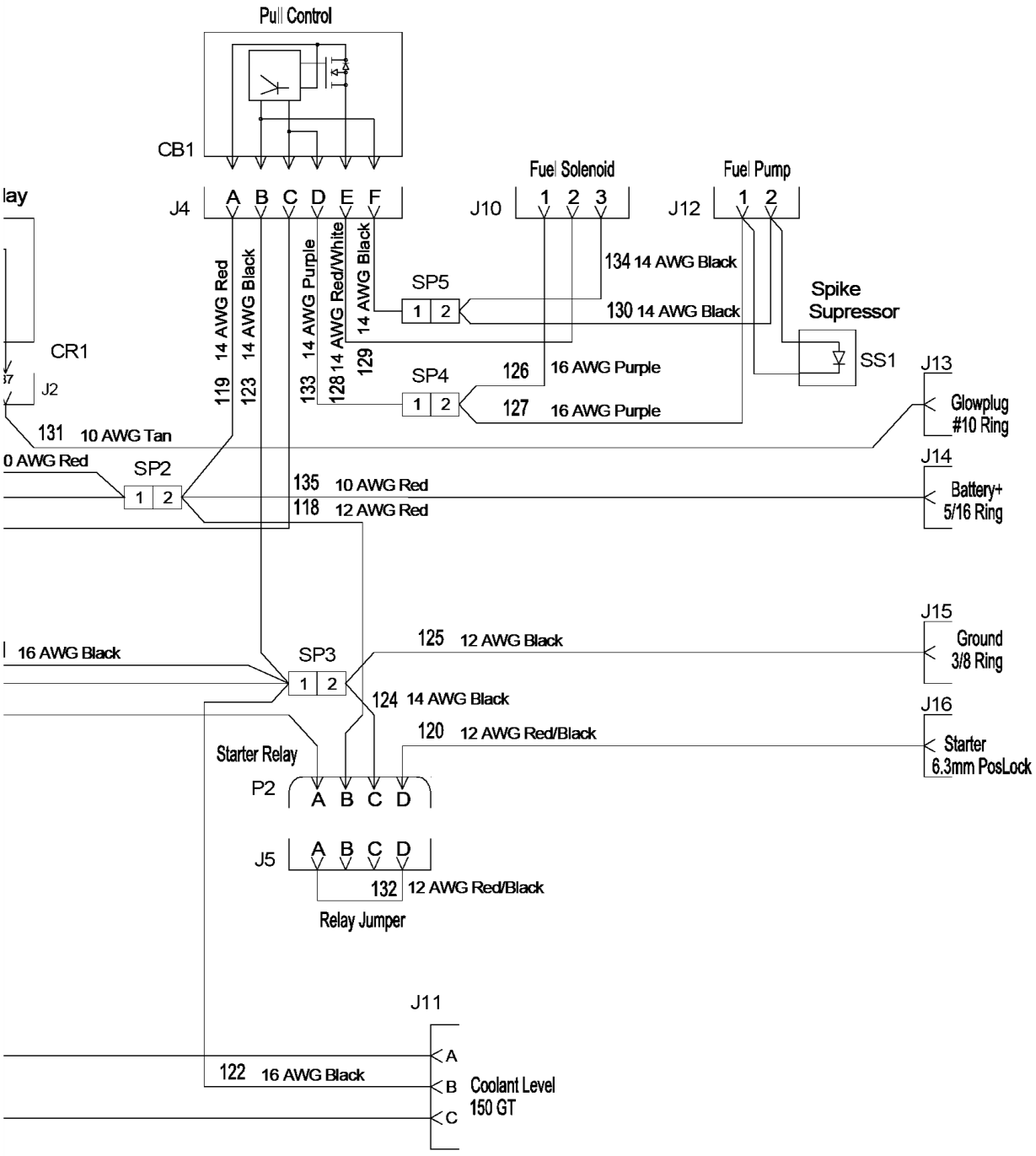
ELECTRICAL SCHEMATICS

YANMAR ENGINE WIRING HARNESS — TIER II MAUFACTURED FEB 2012 TO PRESENT



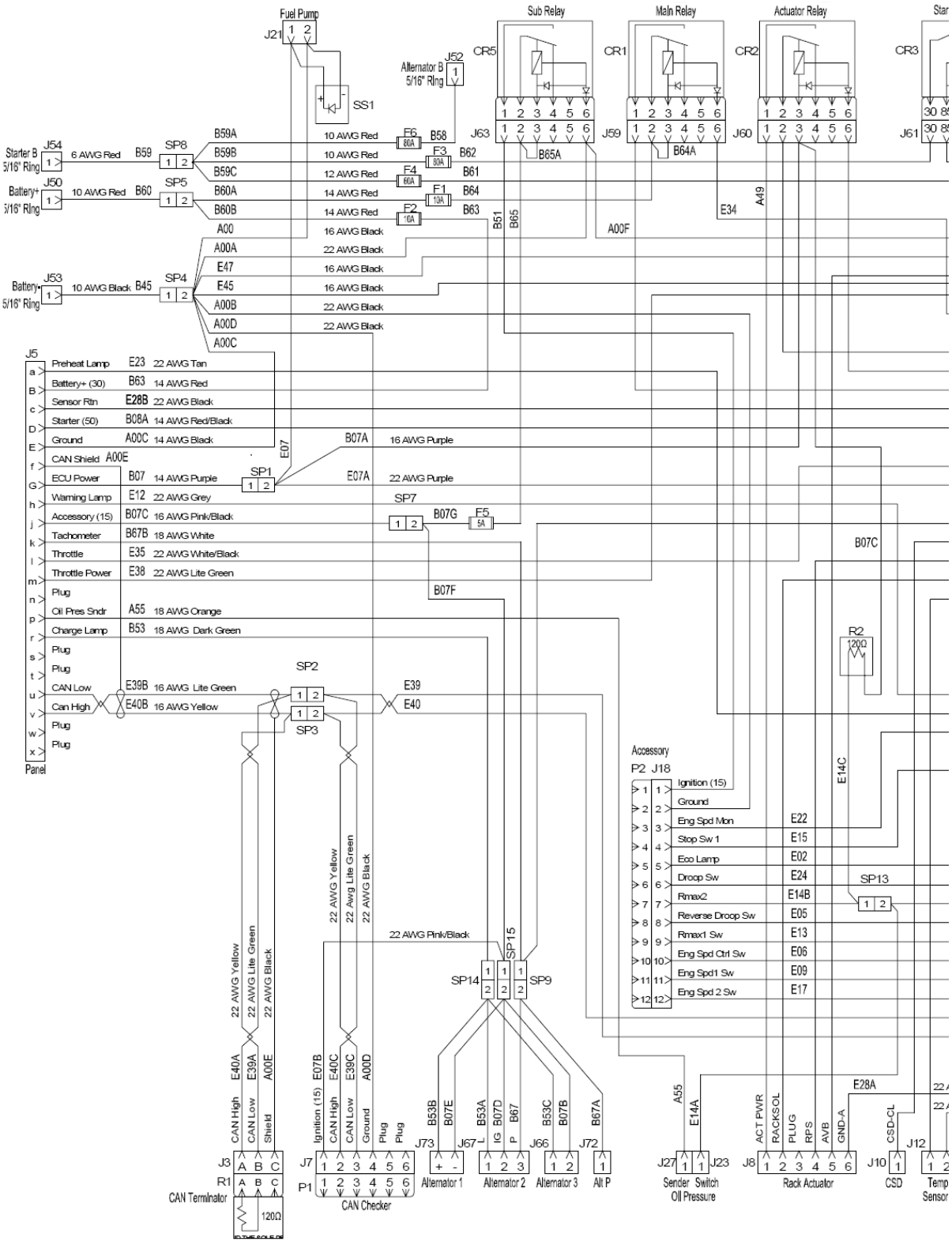
ELECTRICAL SCHEMATICS

YANMAR ENGINE WIRING HARNESS — TIER II MAUFACTURED FEB 2012 TO PRESENT



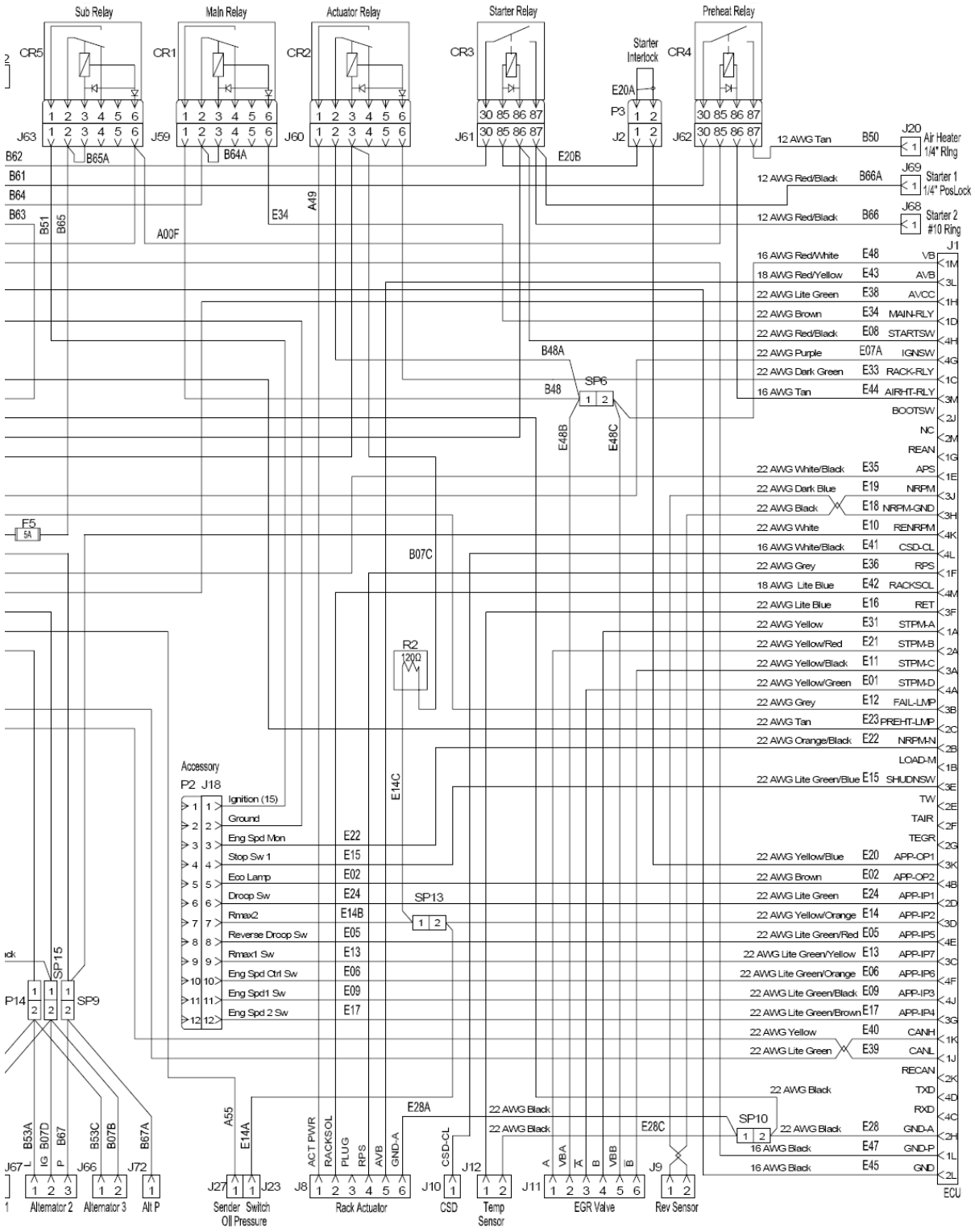
ELECTRICAL SCHEMATICS

YANMAR ENGINE WIRING HARNESS — YANMAR TIER III DIESEL



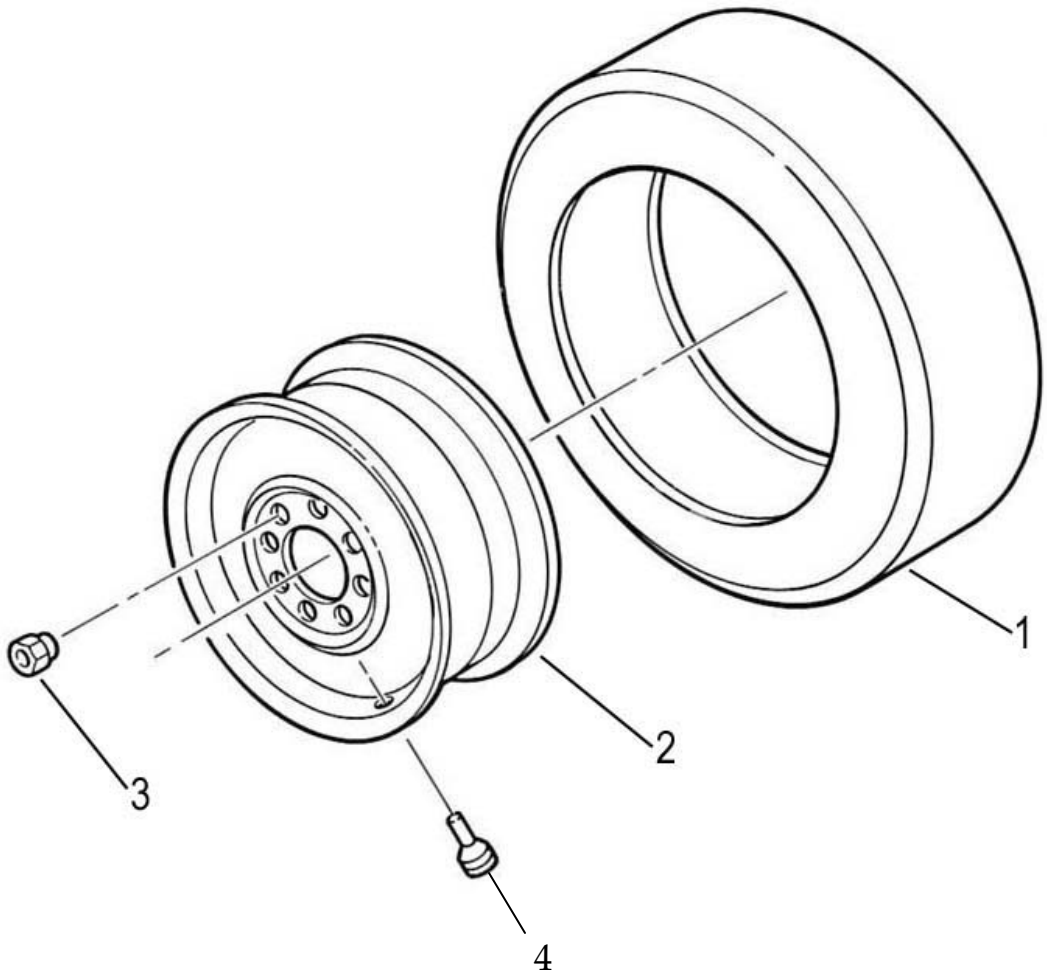
ELECTRICAL SCHEMATICS

YANMAR ENGINE WIRING HARNESS — YANMAR TIER III DIESEL



WHEELS & TIRES

WHEEL & TIRE ASSEMBLY

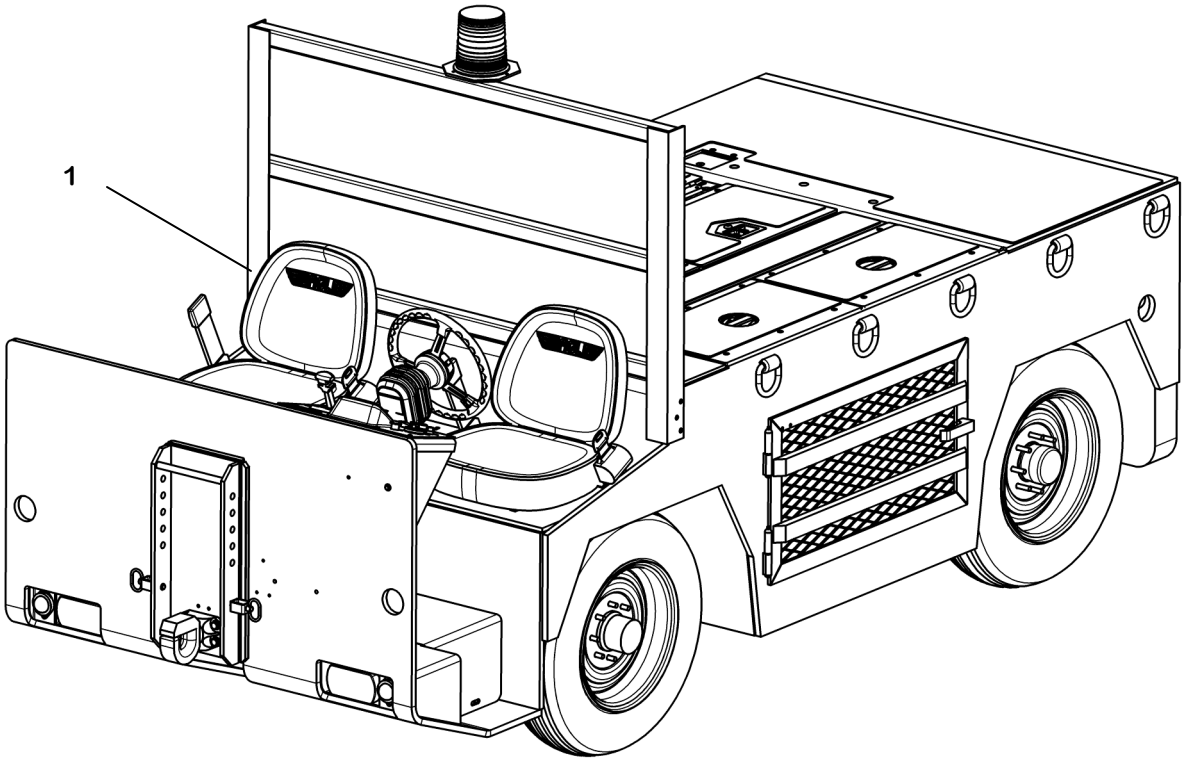


Item	Part Number	Qty	Description
1	A-SATS-00121	4	TIRE 875R16.5"
2	A-TT4-00122	4	RIM 16.5 X 6.75
3	A-TT4-00123	32	LUG NUT
4	A-TT4-00124	4	VALVE STEM

LUG NUT TORQUE SPECIFICATIONS –TIGHTEN TO 150 FT LBS

OTHER ASSEMBLY

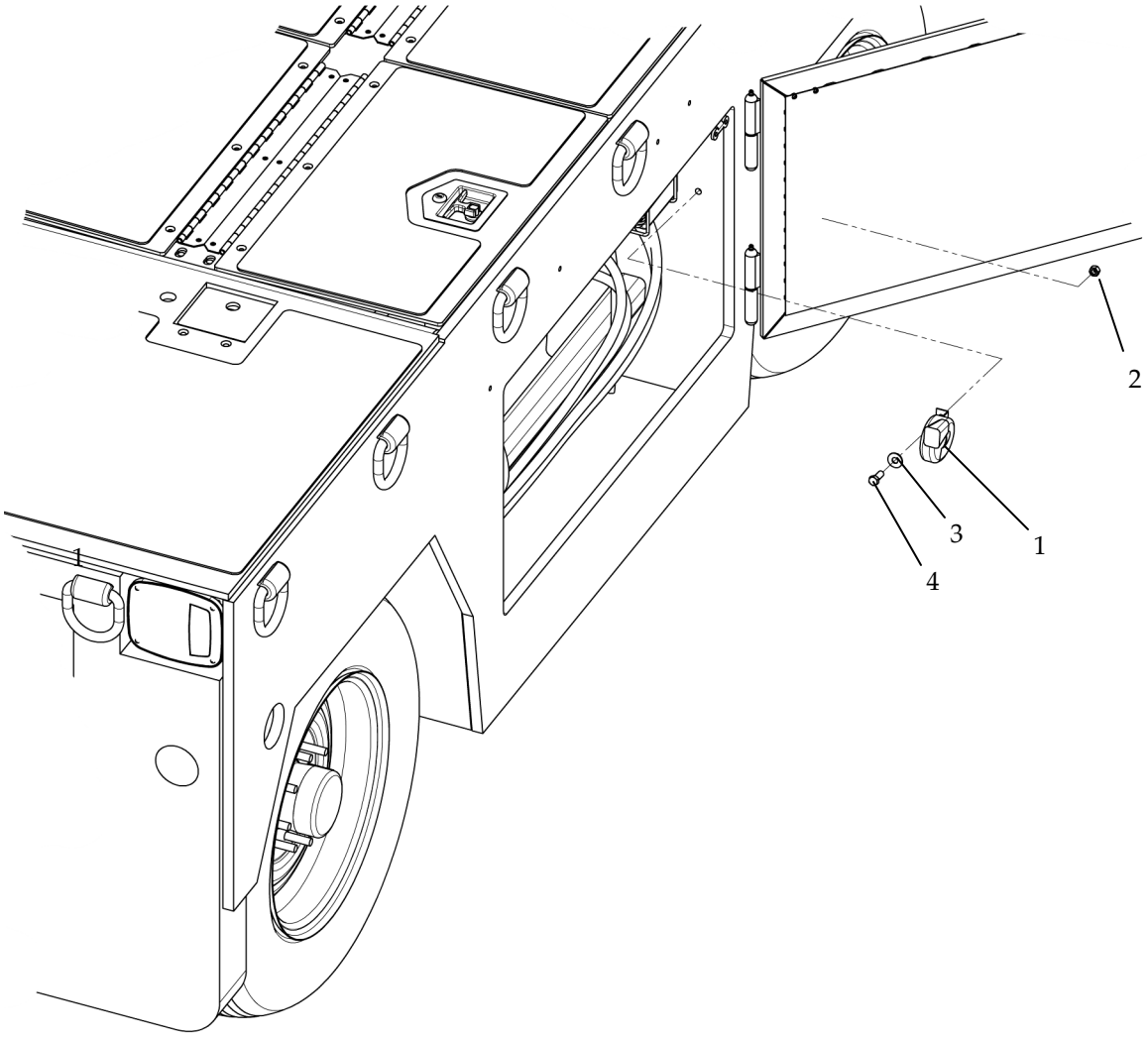
SEATS



Item	Part Number	Qty	Description
1	A-SATS-00048	2	SATS SEAT WITH HIP RESTRAINT(BLACK)
2	A-SATS-00048-TC	2	SATS SEAT WITH HIP RESTRAINT(TAN)

OTHER ASSEMBLY

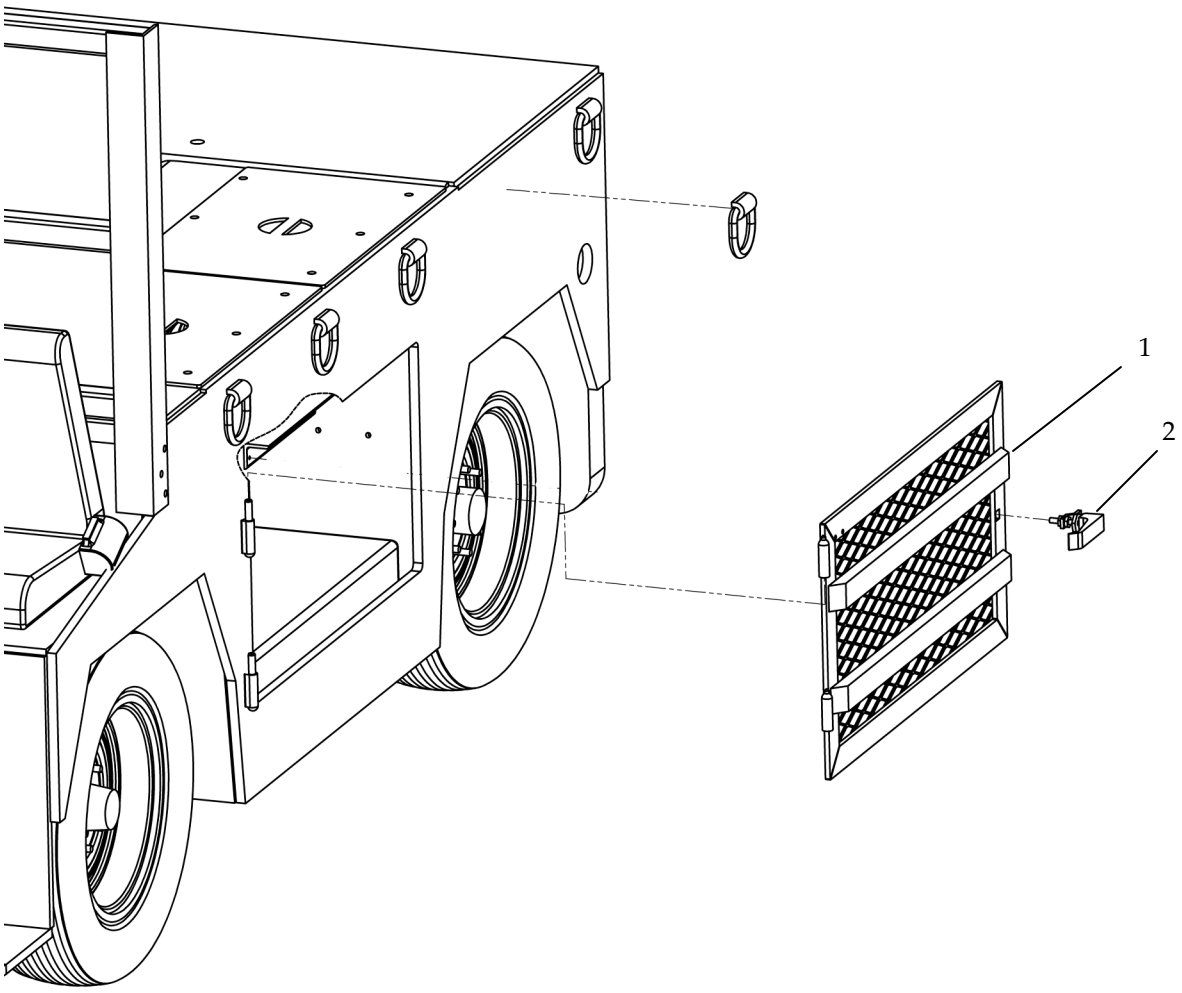
HORN ASSEMBLY



Item	Part Number	Qty	Description
1	A-TT4-0052	1	HORN ASSEMBLY
2	NPN	1	NUT, LOCK 3/8-16
3	NPN	1	WASHER, FLAT 3/8
4	NPN	1	SCREW, HEX CAP 3/8-16 X 1

OTHER ASSEMBLY

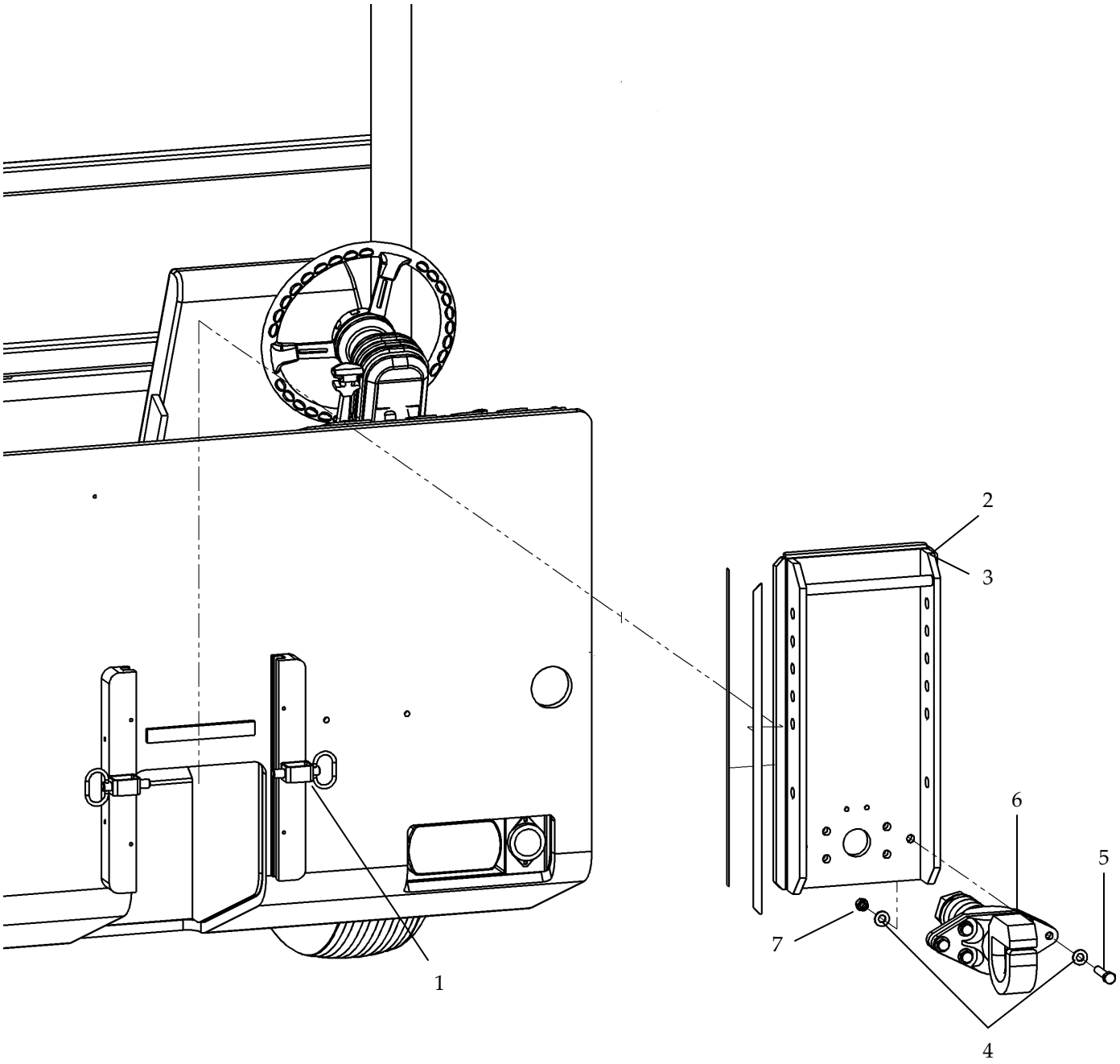
SIDE ACCESS DOOR



Item	Part Number	Qty	Description
1	D-TT4-0009-1	1	SIDE ACCESS DOOR
2	62-10-603-20	1	LATCH SIDE ACCESS DOOR

OTHER ASSEMBLY

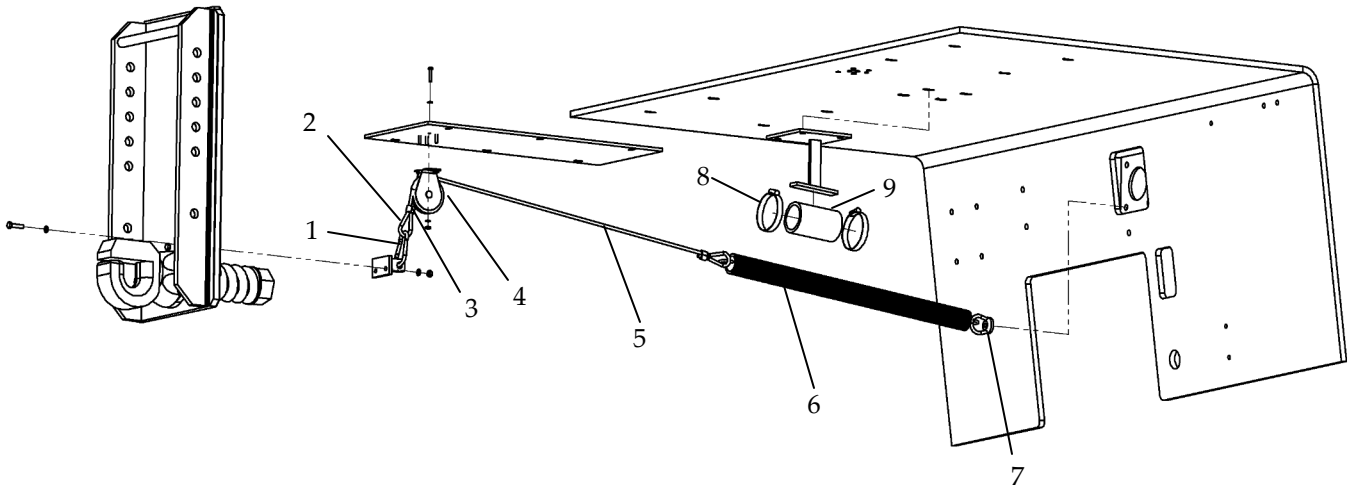
HITCH OPTIONS



Item	Part Number	Qty	Description
1	B2598H	4	5/8" SPRING LATCH
2	A-SATS-00410	1	FRONT HITCH WELDMENT
3	A-SATS-00420	1	REAR HITCH WELDMENT
4	NPN	2	1/2" FLAT WASHER
5	NPN	6	1/2-13 X 2.5 GR8 HCS BOLT
6	AE-OPT-0032	1	PINTLE HOOK-SWIVEL MT W/SHOCK
7	NPN	6	1/2" LOCK NUT

OTHER ASSEMBLY

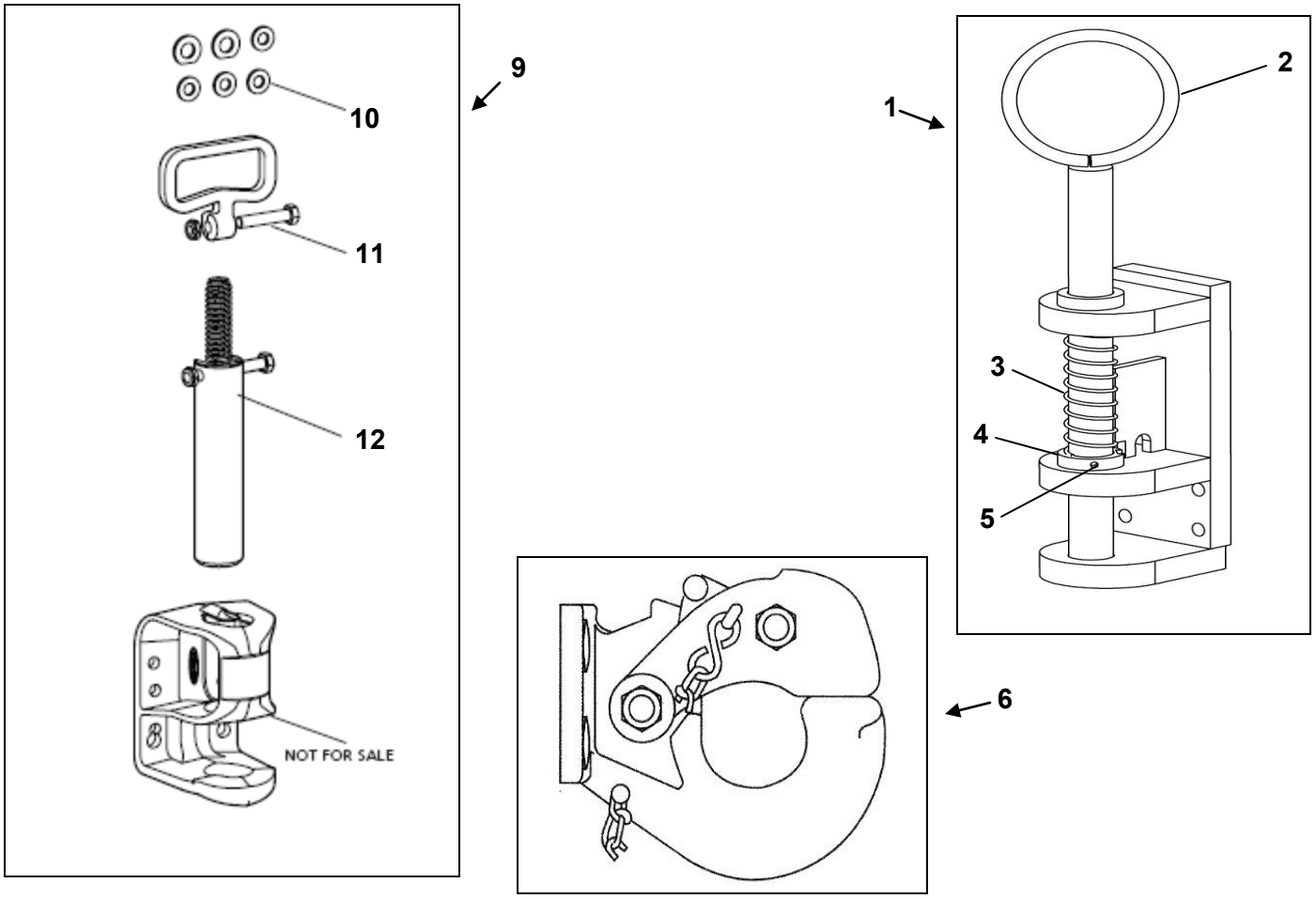
HITCH OPTIONS



Item	Part Number	Qty	Description
1	AE-OPT-0180-4	1	SNAP LINK
2	AE-OPT-0180-6	2	THIMBLE
3	AE-OPT-0180-7	2	ALUM HOUR GLASS
4	A-SATS-00415	1	PULLEY
5	AE-OPT-0180-5	1	COATED CABLE 45 INCHES
6	A-SATS-00416	1	SPRING
7	AE-OPT00180-8	1	EYE NUT
8	NPN	2	# 40 HOSE CLAMPS
9	NPN	1	PVC PIPE 4"

OTHER ASSEMBLY

HITCH OPTIONS

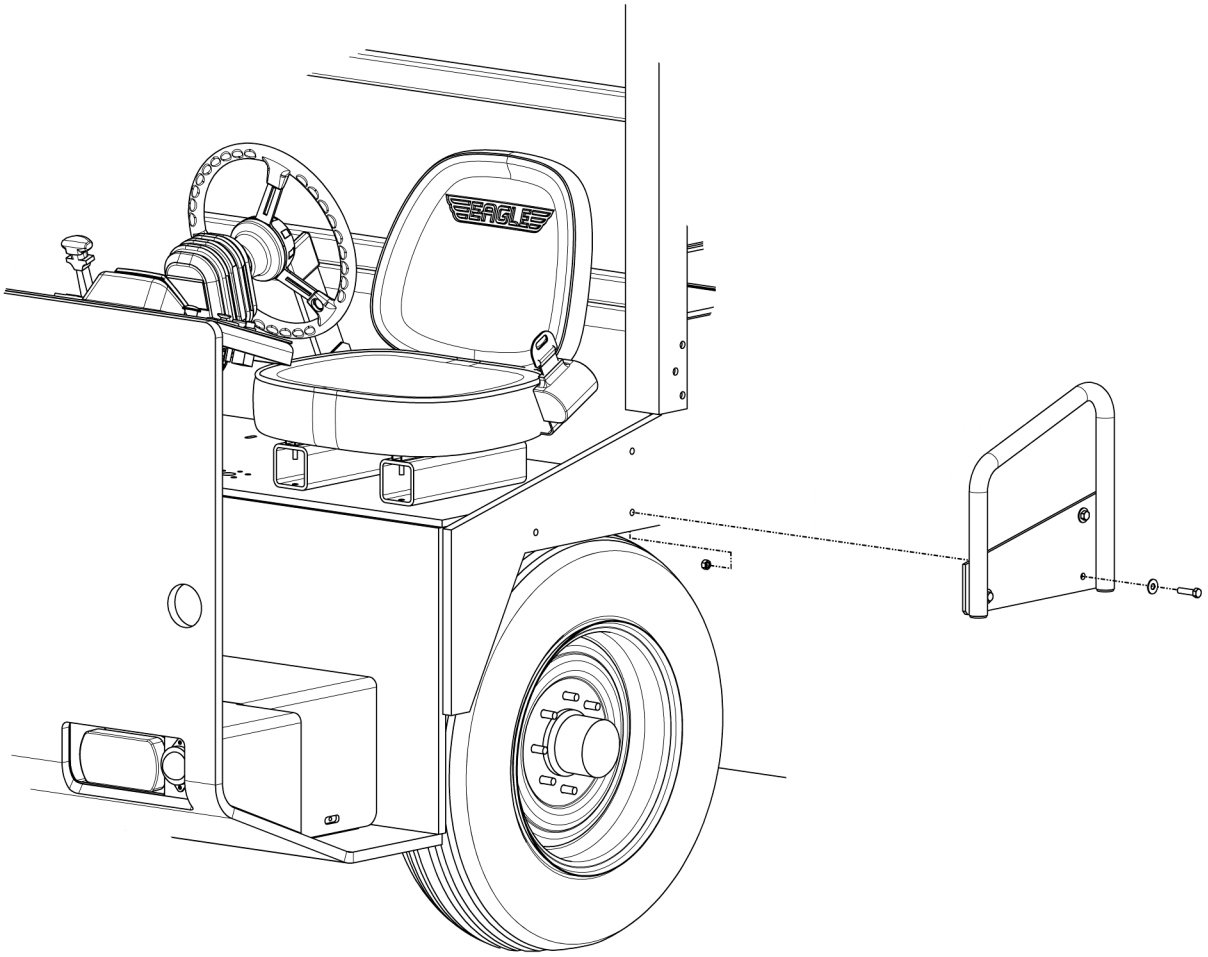


Item	Part Number	Qty	Description
1	AE-OPT-0033	1	E-HITCH 1 1/2 " PIN-COMPLETE ASSEMBLY
2	B-TT3-0008 DET2	1	E-HITCH GUIDE 1 1/2" GUIDE PIN WITH RING
3	B-TT3-0008A	1	E-HITCH SPRING
4	B-TT3-0008 DET5	1	LOCKING COLLAR
5	B-TT3-0008B	1	ROLL PIN
6	AE-OPT-0028	1	PINTLE HOOK
7	AE-OPT-0026	1	AIRLINE HITCH 3" PIN WITH CABLE(NOT SHOWN)
8	AE-OPT-0093	1	AIRLINE HITCH 2 3/8" PIN (NOT SHOWN)
9	AE-OPT-0033-1	1	HOLLAND HITCH
10	RK-11438	1	WASHER SET HOLLAND HITCH
11	RK-11440	1	HANDLE KIT HOLLAND HITCH
12	RK-11439	1	PIN & SPRING KIT HOLLAND HITCH

* The above are standard hitch options. Please call for special hitch options information

OTHER ASSEMBLY

HIP RESTRAINT



Item	Part Number	Qty	Description
1	A-SATS-00215-L	1	HIP RESTRAINT LEFT
	A-SATS-00215-R	1	HIP RESTRAINT RIGHT
2	NPN	3	3/8-16 X 1.5 HCS
3	NPN	3	3/8 FLAT WASHER
4	B-TT3-0008 DET5	3	3/8 HEX NUT

MAINTENANCE

DAILY OPERATOR RESPONSIBILITIES

Proper Fluid Checks

Engine Oil

Check engine oil with the unit on a level surface, the key in the "OFF" position, the shifter position in "PARK" and parking brake applied. Open side access door. Remove dipstick from crankcase, wipe it with a cloth. Insert it fully and take out it gently again. Check the oil level by the marks on the dipstick. The oil level must be between the "Max" level and the "Min" level. DO NOT OVERFILL! SEE PAGES 12 & 13 FOR SAFETY BULLETIN!

Coolant

DO NOT remove recovery tank cap or check coolant level while engine is hot! With engine cool, the key in the "OFF" position, the shifter position in "PARK" and the parking brake applied, open hood, set hood prop and look at left side of recovery tank. The reservoir tank is translucent, so the fluid is readily visible without removing the cap. Fluid level should be at the "Cold fill level".

Transmission Fluid

With unit in park and parking brake set in the "ON" position, start engine. Open side access door. Remove dipstick from transmission case, wipe it with a cloth. Insert it fully and take it out gently again. Check the fluid level by the marks on the dipstick. The transmission fluid level must be between the "Max" level and the "Min" level on the dipstick. DO NOT OVERFILL.

Brake Fluid

Check brake fluid with the unit on a level surface, the key in the "OFF" position, the shifter position in "PARK" and parking brake applied. Open hood, set hood prop and locate master cylinder reservoir. Remove spring clips and take off lid. Brake fluid level should be at the top of reservoir.

Power Steering Fluid

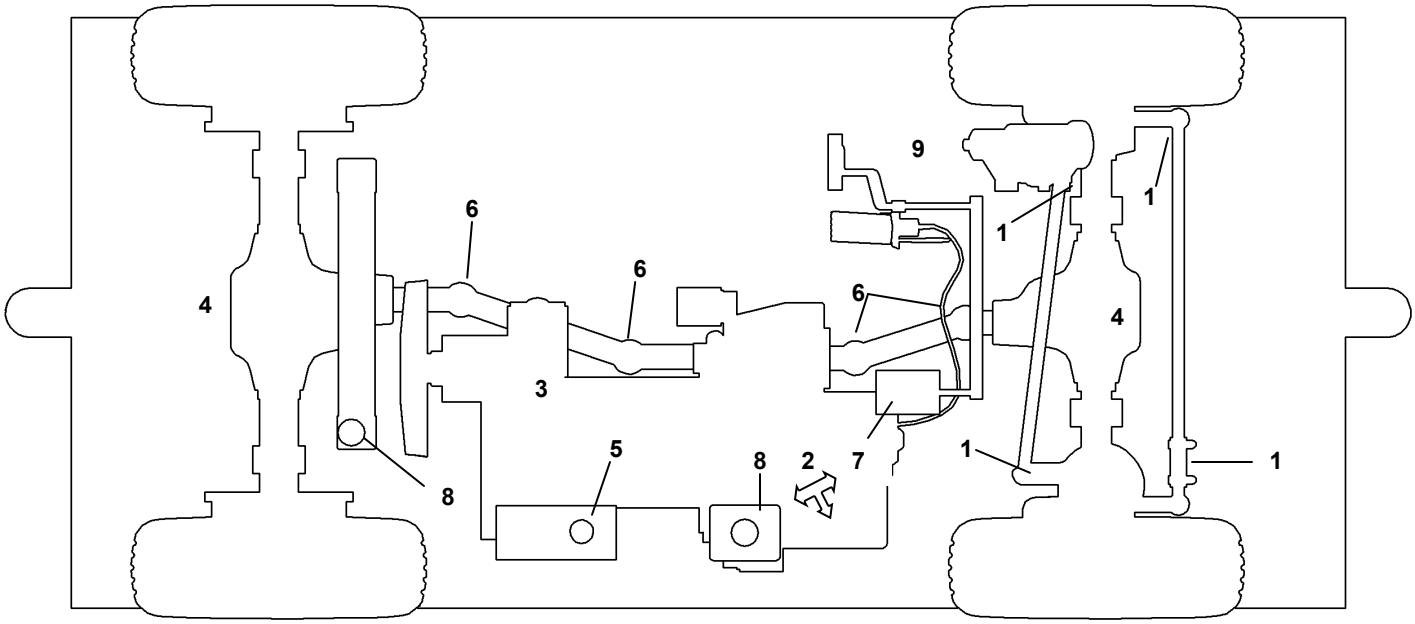
Check power steering fluid with key in "OFF" position, the shifter position in "PARK" and the parking brake applied. Open hood, set hood prop remove cap from power steering reservoir. Fluid level should be between the arrows on the indicator stick. DO NOT OVERFILL.

Recommended Filters:

Engine oil	129150-35153	Fuel Filter	119802-55801
Air Cleaner	Donaldson P601437	Fuel/Water Seperator Filter	129242-55730
Transmission Filter	Wix 58705	Lubricity Filter(If Equipped)	Fleetgard FS20000
Hyd Steering Element	U1L3FE 10 Micron		

MAINTENANCE

LUBRICATION CHART



Item	Identification	Service	Lubricant
1	STEERING LINKAGE	LUBE	EP MULTIPURPOSE GREASE
2	TRANSMISSION OIL	CHECK	DEXTRON III TYPE TRANSMISSION FLUID
3	ENGINE OIL	CHANGE	15W40 CD OE/HDO (MIL-L-2104)
4	DRIVE AXLES	CHECK	80-90 GEAR OIL (MIL-L-2105)
5	POWER STEERING PUMP	CHECK	AUTOMOTIVE POWER STEERING FLUID
6	DRIVE SHAFT	LUBE	EP MULTIPURPOSE GREASE
7	BRAKE MASTER CYLINDER	CHECK	DOT 3 BRAKE FLUID
8	ENGINE COOLANT*	CHECK	ETHYLENE GLYCOL/ WATER (50/50 MIX) MIL-A-46153
9	ACCELERATOR CABLE AND SHIFT CABLE	LUBE	**SUMMER MONTHS WD40 PENETRATING OIL WINTER MONTHS ANTI FREEZE

*CHECK WHEN ENGINE IS AT OPERATING TEMPERATURE
**IT IS RECOMMENDED BY MANUFACTURER TO PROLONG THE LIFE OF YOUR ACCELERATOR CABLE THAT THE ABOVE LUBRICATION BE FOLLOWED

MAINTENANCE

PREVENTATIVE MAINTENANCE SCHEDULE

	Description of Check/Service	Operational Hours								
System	**X**-Check * Requires Service **Contact your local Yanmar distributor or dealer	Daily	50	250	500	750	1000	1250	1500	2000
Engine Oil	Engine Oil and filter ***first 50 and every 250 hours thereafter**	X	*	*	*	*	*	*	*	*
Transmission	Transmission Fluid	X								*
Steering	Power Steering Fluid	X								
	Steering Linkage				X		X		X	X
Cooling System	Coolant Level Check **X** Flush *	X					*			*
	Check & Clean Radiator Fins***every 50 hours**		*							
	Coolant Hoses		X	X	X	X	X	X	X	*
	Belts		X	X	X	X	X	X	X	X
Fuel System	Fuel System Leak Check		X	X	X	X	X	X	X	X
	Fuel Filter ***every 500 hours**				*		*		*	*
	Drain Water/Fuel Seperator ***every 50 hours**	X	*							
	Clean Water/Fuel Filter ***every 250 hours**			*	*	*	*	*	*	*
	Lubricity Filter ***every 250 hours**			*	*	*	*	*	*	*
Air Cleaner	Air Cleaner Element ***every 500 hours**				*		*		*	*
Engine Compartment	Engine Rubber Mounts		X	X	X	X	X	X	X	X
	Lap Intake/Exhaust Valve Seats						**			
	Adjust Intake/Exhaust Valve Clearance						**			
	Check & Adjust Governor Lever & Engine Speed Control ***every 250 hours**	X		X	X	X	X	X	X	X
	Inspect Crankcase Breather System Valve Cleaning								**	
	Inspect,Clean &Check Injection Nozzles								**	
Electrical	Electrical Wires and Connections		X	X	X	X	X	X	X	X
	Battery Cables	X								
Throttle	Throttle Controls		X	X	X	X	X	X	X	X
Brake System	Brake Fluid	X								
	Brake Pads (Front)				X		X		X	X
	Drum Brake Lining (Rear)				X		X		X	X
	Brake Lines and Hoses				X		X		X	X

MAINTENANCE

PREVENTATIVE MAINTENANCE SCHEDULE

	Description of Check/Service	Operational Hours								
System	**X**-Check * Requires Service **Contact your local Yanmar distributor or dealer	Daily	50	250	500	750	1000	1250	1500	2000
Suspension	Suspension U-Bolts 110-120 FT LBS		*							
	Drive Axles				*		*		*	*
	Axle Shaft U-joint				*		*		*	*
	Driveshaft			*	*	*	*	*	*	*
	Spindle Nuts(500381-3) Retorque to 40 FT LB		*	X	X	X	X	X	X	X
Tires	Rotate Tires ***every 500 hours**				*		*		*	*
	Lug Nut Torq 150 FT LBS									

The above chart provides recommended preventative maintenance intervals. Your actual maintenance program May vary depending on vehicle usage.

This section below has been added to for your record keeping convenience

Date Service Performed	
Tug Serial Number	
Tug Hours	
Technician	

MAINTENANCE

FRONT END ALIGNMENT PROCEDURE

Find center line of tire front and back

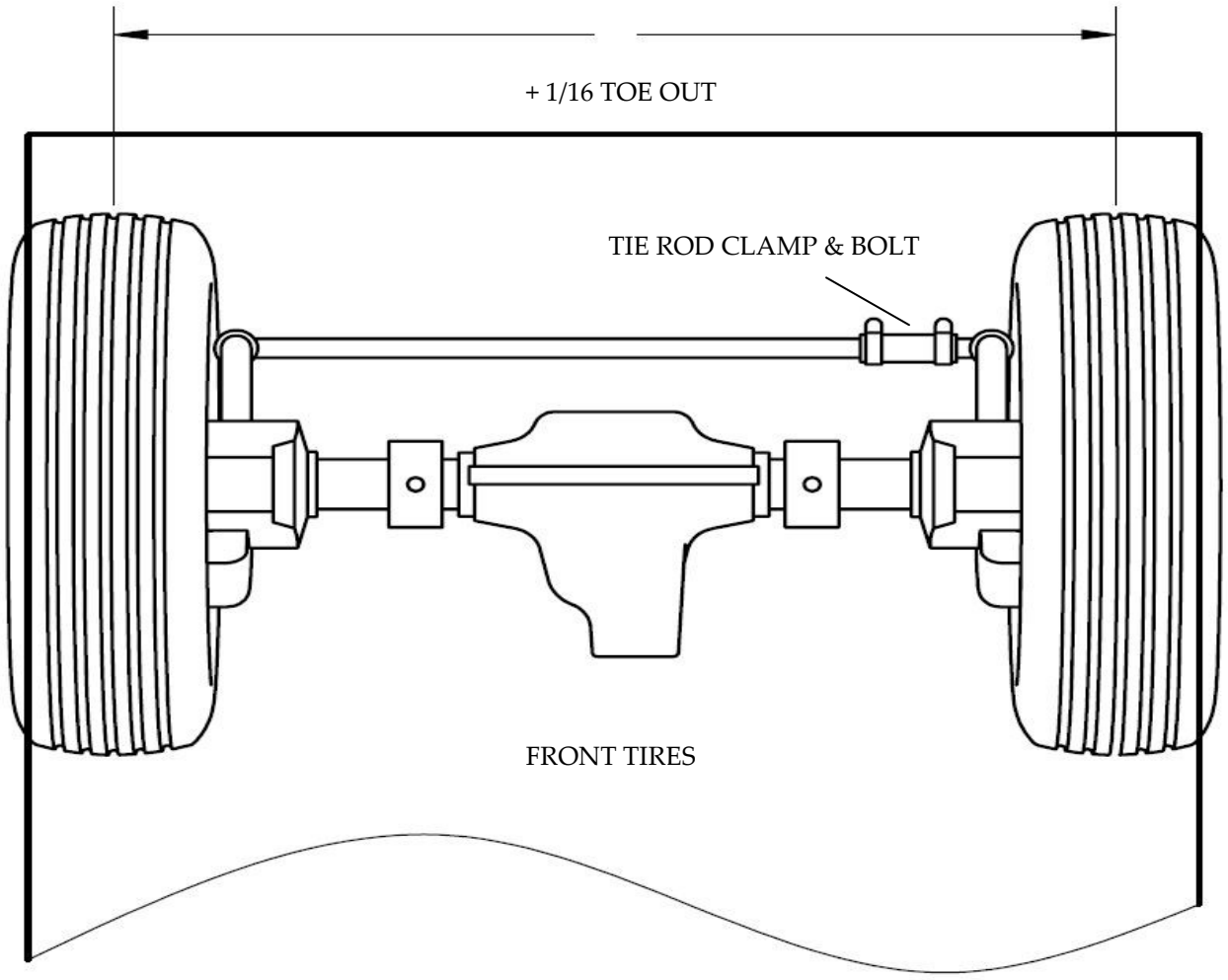
Check with tape measure to see difference

The front should be 1/16 inch more that the rear

1/16 inch toe out, if less or greater loosen the two bolts on the tie rod clamp

Turn clamp in or out to achieve desired setting—1/16 in toe out

Retighten two bolts on the tie rod clamp



MAINTENANCE

TIPS FOR INCREASED ALL WEATHER TRACTION DURING AIRCRAFT PUSHBACK

1.Reduce air pressure in pneumatic tires from 60 PSI to as low as 25 PSI. (**restore air pressure to 60 psi as soon as weather emergency ends).

2.When pushing with All Wheel Drive tractors, make sure the towbar is level or slightly downhill toward tractor.

3.When towing with Rear Wheel Drive-raise hitch height.

4.When pushing with Rear Wheel Drive-lower hitch height.

Note: These strategies(2, 3 and 4) maximize all weather traction.

5.When pushing aircraft on ice or icy snow with All Wheel Drive, a wheel may loose traction (wheel spin). To stop front wheel spin, apply some service brake gradually with left foot until wheel spin stops and hold, while continuing the pushback. Coordinate the left foot service brake pressure and the right foot accelerator, to maintain a smooth pushback.

6.On ice or snow use chains or cables. If the use of chains is prohibited, there are traction cables that serve the same function as chains but are much easier to mount and are very kind in terms of abrasion to all surfaces.

7.Keep fuel tank full, as much as possible.

8.Consult with Eagle Tugs factory for additional assistance.

MAINTENANCE

YANMAR ENGINE TROUBLE SHOOTING		
SYMPTOM	**PROBABLE CAUSE**	**ACTION**
Indicator Turns On-Engine Running		
Engine Coolant Indicator	Low engine Coolant	Add engine coolant
	Dirty radiator fins	Clean the radiator fins
	Engine coolant leaking	See authorized Yanmar industrial engine dealer or distributor
	V-belt loose or damaged	Adjust V-belt or replace
	Contaminated engine coolant	See authorized Yanmar industrial engine dealer or distributor
	Faulty engine coolant pump	
Battery Indicator	V-belt loose or damaged	Adjust V-belt or replace
	Battery failure	Check battery condition
	Faulty alternator	See authorized Yanmar industrial engine dealer or distributor
Indicator Does Not Turn ON-Key Switch is Turned to ON(OFF-ON) Engine Not Running		
	Faulty electrical wiring or faulty indicator	See authorized Yanmar industrial engine dealer or distributor
Indicator Stays On-Key Switch is Turned from Start to On(START-ON)-Engine Not Running		
Battery Indicator stays ON	Faulty alternator	See authorized Yanmar industrial engine dealer or distributor
Engine oil pressure indicator stays ON	Faulty engine oil pressure switch	see authorized Yanmar industrial engine dealer
	No or low level of engine oil	Check and adjust oil level as necessary
	Clogged engine oil filler	Replace engine oil filter

MAINTENANCE

YANMAR ENGINE TROUBLE SHOOTING		
SYMPTOM	**PROBABLE CAUSE**	**ACTION**
Engine Does Not Start		
Starter motor operates but engine does not start	No diesel fuel	Refuel and prime fuel system
	Air in fuel system	Prime fuel system
	Improper diesel fuel	Replace with recommended diesel fuel
	Clogged fuel filter	Replace fuel filter
	Poor fuel injection	See authorized Yanmar industrial engine dealer or distributor
	Compressed air leakage from intake/exhaust valves	
	Faulty engine stop solenoid	
Starter motor does not operate or rotates too slowly(engine can be turned manually)	Battery needs charging	Check electrolyte, recharge
	Faulty starter switch	Clean terminals, retighten
	Faulty starter motor	See authorized Yanmar industrial engine dealer or distributor
Engine cannot be manually turned	Inner parts seized or damaged	
White or Black Enhaust Smoke		
Black exhaust smoke	Engine overload	Reduce load
	Clogged air cleaner element	Clean element or replace
	Improper diesel fuel	Replace with recommended diesel fuel
	Faulty spraying of fuel injection	See authorized Yanmar industrial engine dealer or distributor
	Exessive intake/exhaust valve clearance	
White exhaust smoke	Improper diesel fuel	Replace with recommended diesel fuel
	Faulty spray pattern of fuel injection	See authorized Yanmar industrial engine dealer or distributor
	Fuel injection timing delay	
	Engine burning oil	

YANMAR ENGNE ERROR CODES

DTC to SPN/FMI Conversion

DTC	Description	SPN	FMI
P0117	Engine Coolant Temperature Sensor : Shorted to low source	110	4
P0118	Engine Coolant Temperature Sensor : Shorted to high source	110	3
P0119	Engine Coolant Temperature Sensor : Intermittent fault	110	2
P0122	Accelerator Pedal Position Sensor "A" : Shorted to low source	91	4
P0123	Accelerator Pedal Position Sensor "A" : Shorted to high source	91	3
P0124	Accelerator Pedal Position Sensor "A" : Intermittent fault	91	2
P0217	Engine Coolant Temperature : Too High	110	0
P0219	Engine speed : Over speed condition	190	0
P0222	Accelerator Pedal Position Sensor "B" : Shorted to low source	29	4
P0223	Accelerator Pedal Position Sensor "B" : Shorted to high source	29	3
P0224	Accelerator Pedal Position Senosr "B" : Intermittent fault	29	2
P0340	Engine Fuel Injection Pump Speed Sensor : Shorted to low source	1078	4
P0562	System Voltage : Too Low	158	1
P0563	System Voltage : Too High	158	0
P0601	E-ECU internal fault : EEPROM ReadWrite fault	630	12
P0605	E-ECU internal fault : FlashROM Check Sum Error (Main Software)	628	12
P0634	E-ECU Internal Temperature : Too High	1136	0
P0642	Sensor 5V : Shorted to low source	1079	4
P0643	Sensor 5V : Shorted to high source	1079	3
P0668	E-ECU Internal Temperature Sensor : Shorted to low source	1136	4
P0669	E-ECU Internal Temperature Sensor : Shorted to high source	1136	3
P0686	E-ECU Main Relay : Shorted to low source	1485	4
P1101	Air Cleaner : Mechanical Malfunction	522323	0
P1125	Accelerator Pedal Position Sensor "A" : Below normal operation range	91	1
P1126	Accelerator Pedal Position Sensor "A" : Above normal operation range	91	0
P1128	Accelerator Pedal Position Sensor "A" : Not Available	91	15
P1151	Oily Water Separator : Mechanical Malfunction	522329	0
P1192	Oil Pressure Switch : Shorted to low source	100	4
P1198	Oil Pressure : Too Low	100	1
P1202	Engine Fuel Rack Position Sensor : Shorted to low source	1210	4
P1203	Engine Fuel Rack Position Sensor : Shorted to high source	1210	3
P1211	Engine Fuel Rack Actuator : Mechanical Malfunction	638	7
P1212	Engine Fuel Rack Actuator : Shorted to low source	638	4
P1213	Engine Fuel Rack Actuator : Shorted to high source	638	3
P1214	Engine : Malfunction	638	2
P1217	Engine Coolant Temperature : Abnormal temperature	522314	0
P1221	(Reserved)	522241	7
P1222	Engine Fuel Rack Actuator Relay : Circuit fault A	522241	4
P1223	Engine Fuel Rack Actuator Relay : Circuit fault B	522241	3
P1224	Engine Fuel Rack Actuator Relay : Intermittent fault	522241	2
P1225	Accelerator Pedal Position Sensor "B" : Below normal operation range	29	1
P1226	Accelerator Pedal Position Sensor "B" : Above normal operation range	29	0
P1227	Accelerator Pedal Position Sensor "B" : Communication Fault	29	8
P1228	Acceleratior Pedal Position Sensor "B" : Not Available	29	15
P1232	Air Heater Relay : Circuit fault A	522243	4
P1233	Air Heater Relay : Circuit fault B	522243	3
P1234	Air Heater Relay : Intermittent fault	522243	2
P1242	Cold Start Device : Circuit fault A	522242	4

MAINTENANCE

YANMAR ENGNE ERROR CODES

P1243	Cold Start Device : Circuit fault B	522242	3
P1244	Cold Start Device : Intermittent fault	522242	2
P1340	Aux. Speed Sensor : Shorted to low source	522402	4
P1402	EGR Stepping Motor "A" : Circuit fault A	522251	4
P1403	EGR Stepping Motor "A" : Circuit fault B	522251	3
P1412	EGR Stepping Motor "B" : Circuit fault A	522252	4
P1413	EGR Stepping Motor "B" : Circuit fault B	522252	3
P1422	EGR Stepping Motor "C" : Circuit fault A	522253	4
P1423	EGR Stepping Motor "C" : Circuit fault B	522253	3
P1432	EGR Stepping Motor "D" : Circuit fault A	522254	4
P1433	EGR Stepping Motor "D" : Circuit fault B	522254	3
P1562	Battery Charge Switch : Shorted to low source	167	4
P1568	Charge Warning	167	1
P1601	E-ECU internal fault : EEPROM Error	630	2
P1605	E-ECU internal fault : FlashROM Check Sum Error (Data Set 1)	628	2
P1606	E-ECU internal fault : FlashROM Check Sum Error (Data Set 2)	628	2
P1610	E-ECU internal fault : Sub-CPU Error A	522727	12
P1611	E-ECU internal fault : Sub-CPU Error B	522727	12
P1612	E-ECU internal fault : Sub-CPU Error C	522727	12
P1620	E-ECU internal fault : Engine Map Data Version Error	522728	12
P1644	Sensor 5V : Intermittent Fault	1079	2
P1664	E-ECU Internal Temperature Sensor : Intermittent Fault	1136	2
P2228	Barometric Pressure Sensor : Shorted to low source	108	4
P2229	Barometric Pressure Sensor : Shorted to high source	108	3
P2230	Barometric Pressure Sensor : Intermittent fault	108	2
U0001	High Speed CAN Communication : Communication fault	639	12
U0167	Immobilizer : CAN Communication Fault	522730	12
U0426	Immobilizer : System Fault	1202	2
U1167	Immobilizer : Pulse Communication Fault	522730	8

Some DTC's are dependant on ECU programming. May not be used on all applications

USATS DIESEL SPECIFICATIONS

SPECIFICATIONS & CAPACITIES

MODEL #	YANMAR 4TNV98
DESCRIPTION:	Vertical In-line diesel, 3.3 Liter, four cylinder, direct injection engine

# OF CYLINDERS	4 IN-LINE
BORE & STROKE INCHES (mm)	3.858 X 4.331 in (98 X 112 mm)
DISPLACEMENT, CUBIC INCHES (L)	202, 502 cu in (3.319L)
COMPRESSION RATIO	171 (2.8)
FUEL	No 2 DIESEL
ALTERNATOR	55, 80 OR 105 AMP, NEG GROUND
ENGINE WEIGHT FULLY DRESSED LB (KG) (PROX)	557 (253)

ENGINE CRANKCASE CAPACITIES

ENGINE	U.S. QUARTS	IMPERIAL QUARTS	LITRES
3.3 L (DIESEL***	11.1	9.24	10.5
**10W30(5W20 ARCTIC)			
***15W40CD IN CONTINENTAL U.S.			

FUEL TANK REFILL CAPACITIES

U.S. GALLONS	IMPERIAL GALLONS	LITERS
24.0	19.98	90.8

USA -SAE (SOCIETY OF AUTOMOTIVE ENGINEERS) NO. 2-D, NO. 1-D, ASTM.D975-94

JAPAN– JIS K2204 GRADE NO 2

EUROPEAN UINION– EN590:96

INTERNATIONAL ISO 8217 DMX

UNITED KINGDOM– BS 2869-AL OR A2

KOREA– KSM-2610

CHINA– GB252

*Please refer to Yanmar Engine Instruction Manual for further information

USATS DIESEL SPECIFICATIONS

SPECIFICATIONS & CAPACITIES

TRANSMISSION REFILL CAPACITIES

ENGINE	U.S. PINTS	IMPERIAL PINTS	LITRES
3.3 L DIESEL	8.00	6.60	3.80
* USE DEXTRON III TYPE TRANSMISSION FLUID OR EQUIVALENT			
**ADD 9 PINTS, 7.5 IMPERIAL PINTS OR 4.25 LITERS IF TORQUE CONVERTOR HAS BEEN DRAINED			

ENGINE COOLING SYSTEM REFILL CAPACITIES

ENGINE	U.S. QUARTS	IMPERIAL QUARTS	LITRES
3.3 L DIESEL WITH COPPER RADIATOR	16.00	13.30	15.10
3.3 L DIESEL WITH ALUMINUM RADIATOR	20.00	16.65	18.93
* A 50/50 MIXTURE OF GLYCOL AND CLEAN WATER			

BRAKE SYSTEM

The brake system is power assisted hydraulic, front disc type and rear drum type. USE DOT 5 BRAKE FLUID.

STEERING SYSTEM

The steering system is power assisted hydrostatic type. EQUIVALENT SPEC FOR GM 9985010, CHRYSLER MS-5931 OR FORD ESW-M2C128-C AND D

AXLE REFILL CAPACITIES

AXLE	U.S. PINTS	IMPERIAL PINTS	LITRES
FRONT STEER – NON DRIVE	N/A	N/A	N/A
FRONT DRIVE AXLE	5.20	4.37	2.48
REAR DRIVE AXLE	8.50	7.00	3.75
* SERVICE REFILL CAPACITIES ARE DETERMINED BY FILLING TO THE BOTTOM OF THE FILLER HOLE			
**USE 80W90 HYPOID GEAR LUBRICANT			

MAINTENANCE

FRONT AXLE MAINTENANCE

Dana 44 Front Axle Disassembly Procedure

Please refer to the steps below for proper adjustment procedure.

Note: Please refer to the attached picture of the Dana 44 axle for number reference.

Disassembly Procedure:

Step 1: Lift the tug so that both of the front tires are off the ground and make sure the unit is secured properly.

Step 2: Remove both front wheels.

Step 3: Remove both front calipers leaving the brake hose intact.

Step 4: Remove both of the hub center caps.

Step 5: Use lock ring pliers to remove both lock rings on the left and right side of the tug. (#62)

Step 6: Remove the Gear (#69), spindle (#70) and spring retainer (#71) on both sides.

Step 7: Use socket #OTC 7157 to remove the locking nut. (#59)

Step 8: Remove the locking ring. (#58)

Step 9: Remove the spindle nut.

Step 10: Slide the rotor & hub assembly off the spindle leaving the bearings inside the hub.

MAINTENANCE

FRONT AXLE MAINTENANCE

Reassembly Procedure If the Backing Plate & Spindle Were Removed:

Step 1: Install the backing plate with the chamfer facing the spindle. Note: Be sure the backing plate is aligned in the correct position as it was before it was removed.

Step 2: Tighten the 6 new 3/8-24 stover lock nuts to 33ft lbs.

Step 3: Install the rotor & hub assembly making sure the bearing does not fall out.

Step 4: Install the spindle nut with the dowel facing toward you. Tighten to 35ft lbs to seat the bearings while spinning the rotor.

Step 5: Loosen the spindle nut and re-snug.

Step 6: Install the lock ring making sure the hole in the ring lines up with the dowel on the nut. If it does not, rotate the nut so the dowel is aligned.

Step 7: Install the lock nut and torque to 50ft lbs.

Step 8: Install the spring seat with the flat part facing toward you.

Step 9: Install the spring, the gear and the clip.

Step 10: Apply a small amount of RTV sealant to the cap and install.

Step 11: Install the caliper.

Step 12: Install the tires and lug nuts and torque the nuts to 90ft lbs.

MAINTENANCE

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MAINTENANCE

RECOMMENDED TORQUE SPECIFICATIONS FOR DANA 44 AXLE (FRONT)

POSITION	THREAD	WRENCH TORQUE (LBS.-FT)
Drive Pinion Nut	3/4 - 16	175-225
Differential Bearing Cup Cap Screws	1/2 - 13	70-90
Ring Gear Cap Screws	3/8 - 24	45-65
Cover Screws	5/16 - 18	28-33 (Note A)
Axle Shaft Bearing & Brake Retainer Nuts	3/8 - 24	40-50
Spindle Mounting Nuts	3/8 - 24	40
Spindle Mounting Nuts	7/16 - 20	50-60
Tie Rod Stud Nut	1/2 - 20	35 Min (Note B)
Tie Rod Stud Nut	9/16 - 18	35 Min (Note B)
Tie Rod Clamp Nuts	3/8 - 24	15-25
Tie Rod Clamp Nuts	7/16 - 20	25-40
Steering Arm Nuts	9/16 / 18	80-100
Steering Bolt Stop Screw & Jam Nut	3/8 - 24	10-20

RECOMMENDED TORQUE SPECIFICATIONS FOR DANA 60 AXLE (REAR)

POSITION	THREAD	WRENCH TORQUE (LBS.-FT)
Drive Pinion Nut	7/8 - 14	240-300
Differential Bearing Cup Cap Screws	1/2 - 13	70-90
Ring Gear Cap Screws	1/2 - 20	100-120
Ring Gear Cap Screws	1/2 - 20	120-14 (Note A)
Cover Screws	3/8 - 16	30-40
Brake Retainer Nuts	7/16 - 20	64-70
Axle Shaft Flange Nuts	7/16 - 20	64-70
Upper Kingpin	1 1/8 - 12	500-600
Kingpin Cap Cap Screws	1/2 - 20	70-90
Spindle Mounting Nuts	1/2 - 20	60-80
Tie Rod Stud Nut	5/8 - 18	70 Min (Note B)
Tie Rod Clamp Nuts	1/2 - 20	35-45
Steering Arm Nuts	1/2 - 20	70-90
Steering Bolt Stop Screw & Jam Nut	1/2 - 20	10-20

A.For Grade 9 fastener with locking serrations on underside of cap screw head or nut.

B.If cotter pin cannot be installed after minimum torque is attained, the nut must be advanced until cotter pin can be installed.

MAINTENANCE

Recommended Tool List

Screwdrivers

Philips #1, #2 4" long

Slotted 1/8 X 4, 3/16 X 4, 1/4 X 6, 5/16 X 8

Torx

T25, T27, T30, T40

Nut Drivers

1/4", 5/16", 3/8"

Allen Wrench

7/64, 1/8, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8

Adjustable Wrench

8" & 10"

6) Metric Combination Wrenches

8MM, 10MM, 12MM, 13MM, 14MM, 15MM, 16MM, 17MM, 18MM,19MM, 20MM, 21MM

7) Standard Combination Wrenches

1/4, 5/16, 11/32, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16,1 1/8

8) 3/8 Drive Deep Standard Sockets

3/8, 7/16, 1/2, 9/16

9) 1/2 Drive Deep Standard Sockets

9/16, 3/4, 15/16, 1 1/8

10) 3/8 Drive Standard Sockets

5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4

11) 3/8 Drive Metric Sockets

7, 8, 9, 10, 11, 12, 13, 14, 15, 16

12) 1/2 Drive Metric Sockets

16, 17, 18, 19, 20, 21, 22, 23, 24

13) 1/2 Drive Standard Sockets

9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1 1/8

MAINTENANCE

14) Swivel Universal
    1/2, 3/8 Drives
15) Extension 3/8 Drive
    3, 6, 10 inch
16) Extension ½ Drive
    3, 6, 10 inch
17) OTC 7157
18) OTC 7080
19) OTC 1902
20) 12 volt test light
21) Torque Wrench
    25-250 Foot Pounds
22) 7 inch diagonal pliers
23) 8 inch long nose pliers
24) 6 3/4 inch slip joint pliers
25) 9 1/2 inch arc joint pliers
26) Multimeter
27) Pickle Fork
28) Snap wring pliers
29) Ball Pien Hammer 32 oz
30) Oil Filter wrench
    3/4 inch to 3 3/4 inch in diameter
31) Grease gun with 20″ flex hose
32) Oil pan drain
33) Funnel

Rev	Date	Description	Appr.
7	05-Aug-2013	Added 3″ fill fuel tank information, added LED light option part numbers.	PRB
8	04-Sept-2013	Added new exhaust system design.	PRB
9	10-Oct-2013	Added new Tier3 vehicle electrical schematic.	PRB
10	18-Nov-2013	Removed Warranty Statements. Updated steering hose lengths.	SEB
11	16-Dec-2013	Revised tire part number.	PRB
12	20-Jan-2014	Changed steering hose end to long 90 for better fit.	SEB
13	27-Aug-2014	Corrected Electrical panel layout. Corrected hose p/n in cooling system. Corrected front driveshaft p/n.	SEB